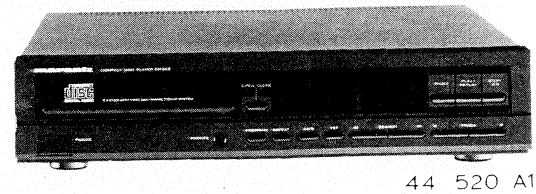
Compact disc player CD583/AB/NB/TB/EB

Service
Service
Service



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Service Manual

COMPACT disc DIGITAL AUDIO

CONTENTS

1 Explanation of subdivision and table of contents per page
2 Controls and technical specifications
3 Servicing hints
4 Exploded view
5 Measurements and adjustments
6 Control & display panel power supply
7 Circuit diagrams
8 Wiring diagram, Voltage adapter
9 Electrical parts list
10 List of symbols

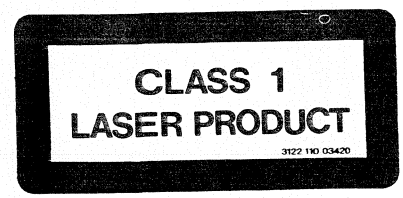
(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago identici a quelli specificati.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.



DocumentationTechnique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Servic

Subject to modification

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Printed in The Netherlands

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Published by Sen
Consumer Electro

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MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

MARANTZ INTERNATIONAL
Vestdijk 9
5600 MD Eindhoven
The Netherlands
Phone: +31/40.758290
Telefax: +31/40.75.82.99
Telex: 35000 PHTC NL routing IND NLMTFAT

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.
The following information must be supplied to eliminate delays in processing your order:

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgeselischaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

THE NETHERLANDS
Elpro Marantz
Wint Hontlaan 28
3526 KV Utrecht
The Netherlands
Telex: 4748

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
0680 Oslo 6
Norway
Telex: 72640

GREAT BRITAIN
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

GREECE
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 401530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Main Road Martindale
P.O. Box. 58088
Newville 21114
South Africa

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badalona (Barcelona)
Spain
Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
DYNAVOX ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

PORTUGAL
MARANTZ
Divisao philips S.A. service
Outurela-carnaxide
2795 LinDA-A-VELHA
Telex: 43906

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

1. EXPLANATION OF THE LAYOUT OF THE DOCUMENTATION

The documentation consists of chapters.
The number of the chapter is indicated by the first digit of the page number.
The second digit of the page number is the sequence numbering.

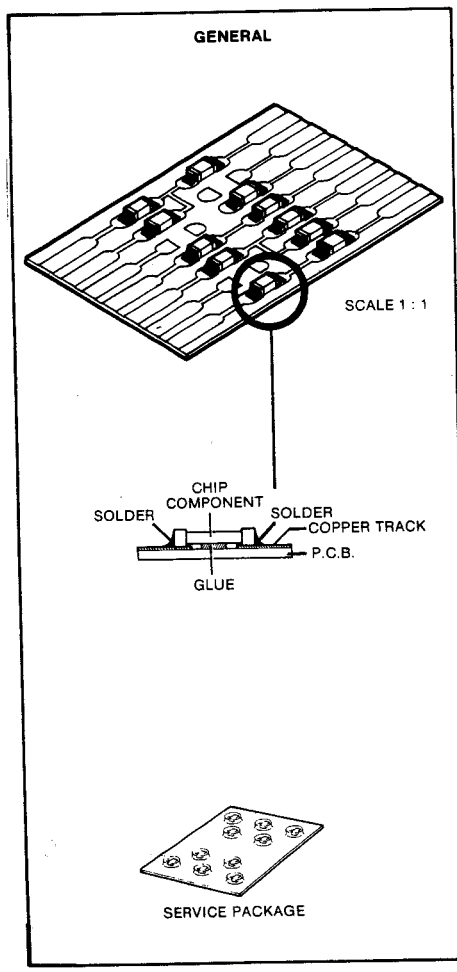
If modifications or supplements require new supplementary or replacement pages, the page number is extended with a third part:

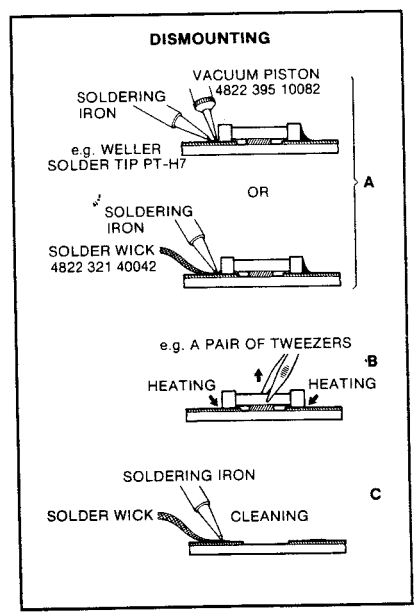
A digit behind the page number indicates that it concerns a supplementary page.
A replacement page is indicated by a letter behind the page number.
Example

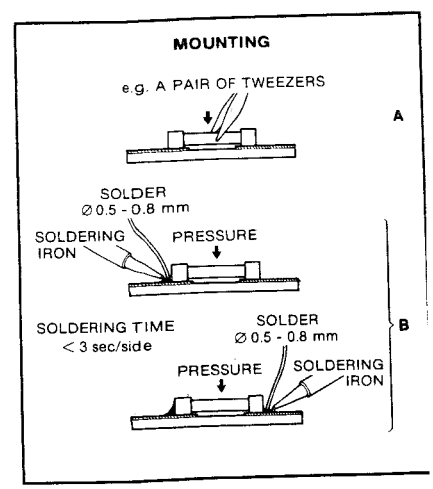
3-6	is page 6 of chapter 3
3-6-1	is a supplementary page behind page 3-6
3-6-a	is the replacement page of page 3-6 (so page 3-6 can be removed from the documentation).

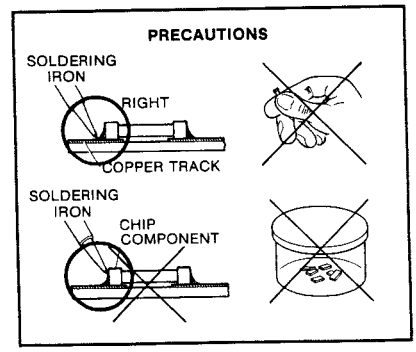
TABLE OF CONTENTS PER PAGE

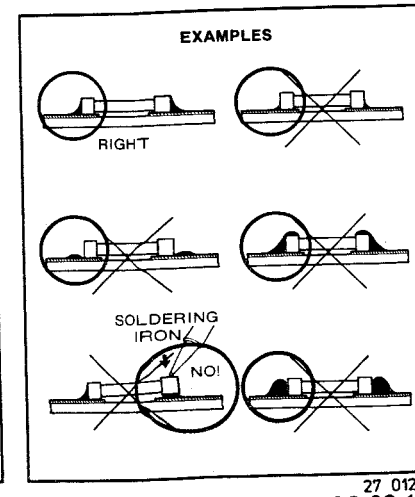
Chapter	Page	Contents
1	1-1	Explanation of the subdivision of the documentation
		Table of contents per page
		Handling chip components
2	2-1	Controls
	2-2	Controls, Technical specification
3	3-1	Servicing hints
4	4-1	Disassembly of the cabinet and loading
	4-2	Exploded view cabinet
	4-3	Exploded view loading
5	5-1	Trouble shooting
	5-2	Measurements and adjustments
	5-3	Measurements and adjustments
	5-4	Measurements and adjustments
	5-5	Measurements and adjustments
		Initiation of the servicing programm
	5-6	Measurements and adjustments
	5-7	Bottom view
		Error table
6	6-1	Control & Display circuit diagram
		Control & Display panel
	6-2	Power supply circuit diagram
7	7-1	Block diagram
	7-2	Servo circuit
	7-3	Drawing of main panel
	7-4	Drawing of main panel
	7-5	Decoding 1 circuit
	7-6	Decoding 2 circuit
8	8-1	Wiring diagram
	8-2	Voltage adapter
9	9-1	Electrical parts list
	9-2	List of chip components
10	10-1	List of symbols
	10-2	List of symbols











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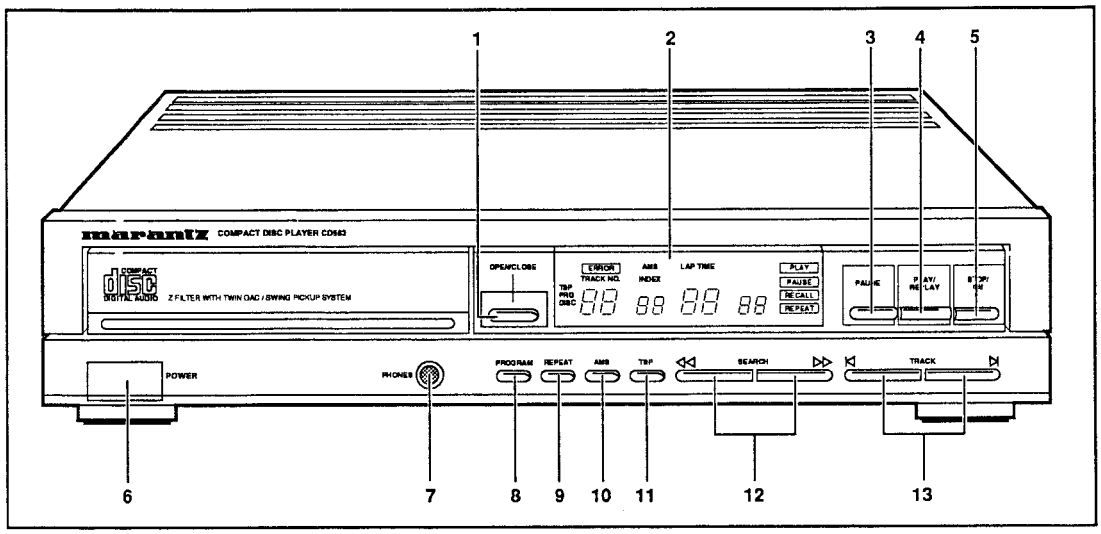

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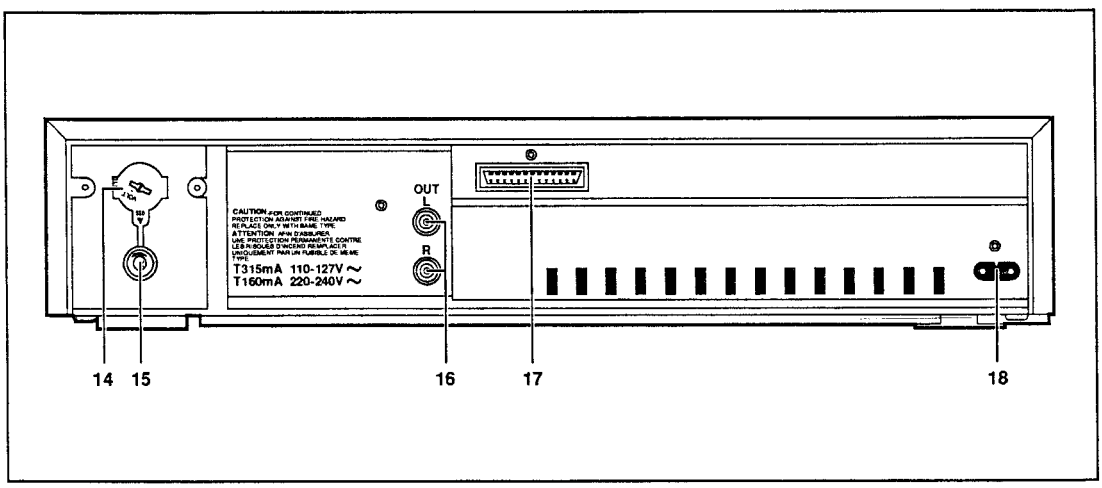

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FRONT OF PLAYER

1 **OPEN/CLOSE**
For opening and closing the disc tray.

2 **DISPLAY**
Informs you about the function of the player

3 **PAUSE**
For interrupting play

4 **PLAY/REPLAY**
For starting play **(PLAY)**
For returning to the beginning of a track **(REPLAY)**

5 **STOP/CM**
For stopping play (**STOP**)
For erasing a programme (**CM** = Clear Memory)

6 **POWER**
For switching the player on and off

7 **PHONES**
For connection of headphones

8 **PROGRAM**
For storing track numbers in a programme
For erasing track numbers from a programme
For checking the programme

9 **REPEAT**
For repeating a disc or programme

10 **AMS**
For automaticly playing the beginning of each track
(**AMS** = Automatic Music scan

11 **TSP**
For playing all tracks on a disc in random order
(**TSP** = Track Shuffle Play)

12 **«SEARCH»**
For fast search for a particular passage (**«SEARCH** backwards; **SEARCH »** forwards)

13 ⏮ **TRACK** ⏭
For selecting another track during play
For selecting a track number to start play with
For selecting track numbers during programming
(⏮ **TRACK** from high to low; **TRACK** ⏭ from low to high)

REAR OF PLAYER

All connections to the rear panel should be made with the power to the entire system switched off.
To avoid cross-connection of channels, connect one plug at a time.

14 VOLTAGE SELECTOR

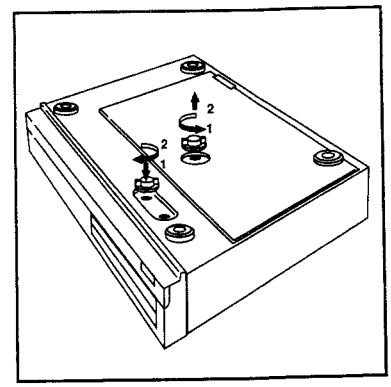
15 MAINS FUSE HOLDER

16 OUT L/R
Insert the two plugs of the connecting lead provided into these sockets and connect the other end of the cable to the CD or AUX sockets of the pre-amplifier or amplifier to be used. Be careful **not** to use the PHONO sockets!
Note that **L** or white corresponds to the left channel and **R** or red to the right channel.

17 MULTY CONNECTOR
For interconnecting equipment when the player is used in a Marantz Midi System. See also 'Multy Connector' on page 8.

18 MAINS SOCKET

3



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REMOVING THE TRANSIT CLAMPS

The two red transit clamps on the underside of the player lock the player mechanism to secure it during transportation.

Remove these transit clamps before using the player
Store them in the recesses provided
Refit them before transporting the player

TECHNICAL SPECIFICATION

- System : Compact Disc Digital Audio system
- Mainsvoltages : 110 V, 127 V, 220 V, 240 V ± 10% (to be changed by transformer connections)
- Mains frequencies : 50,60 Hz(no adaption required)
- Power consumption : ≤20 W
- Frequency range : 20 Hz ÷ 20 kHz ±0,1 dB
- Output voltage : max. 2 V_{rms}/≥10 kOhms
- Output impedance : 200 Ohms
- S/N ratio : ≥96 dB
- Channel separation : ≥90 dB
- Channel difference : ≤0,2 dB
- Total harmonic distortion : ≤−90 dB
- Intermodulation distortion : ≤−90 dB
- De-emphasis : 0 or 15/50 µs (switched by the subcode on the disc)
- Dimensions WxDxH : 360 x 300 x 81 mm (tray closed)
- Weight : approx 3 kg

3. SERVICING HINTS

ESD

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can drastically reduce life expectancy.
When repairing, make sure that you are connected via a wrist wrap with resistance to the same potential as the chassis of the set. Keep components and aids also at the same potential.

When the tray mechanism and CDM-unit has been disassembled the player can be prepared for measurements by bridging the "tray detection" switch SK2 on the main panel.

Explanation of the symbols used

= oscilloscope (ri ⩾ 10 MΩ)

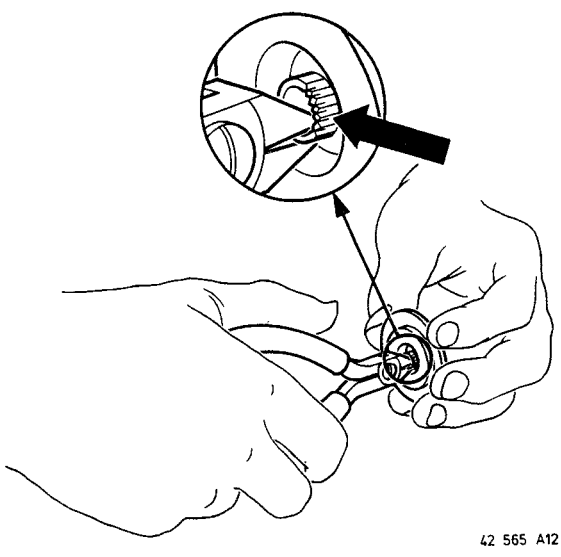
= meter (voltmeter with ri ⩾ 10 MΩ)

= carry out alignment/adjustment

= test point

Service disc hold-down

The disc should always rest properly on the turntable.
To achieve this a disc hold–down has been mounted in a bracket of the tray mechanism.
If the tray mechanism has to be disassembled for servicing, a separate disc hold-down should be used. For a service disc hold–down see the figure below.
Compose a service Disc hold-down in the following way.
- Cut in the most inner ring of a disc holddown pos 118 (4822 462 50383) with small and sharp nippers See fig. below.
- Enlarge the diameter of the innermost ring slightly with the hind part of a pencil or ballpoint, so that it jams onto the turntable with sufficient force.
- If the jamming force decreases after certain time of use, the diameter has to be enlarged with a pencil or ballpoint again.



SERVICE AIDS

Audio test disc 3	4822 397 30085
Disc without errors 5 + disc with DO errors, black spots and fingerprints 5A	4822 397 30096
Disc (65 min 1kHz) without pause	4822 397 30155
Torx screwdrivers	
Set (straight)	4822 395 50145
Set (square)	4822 395 50132
13th order filter	4822 395 30204

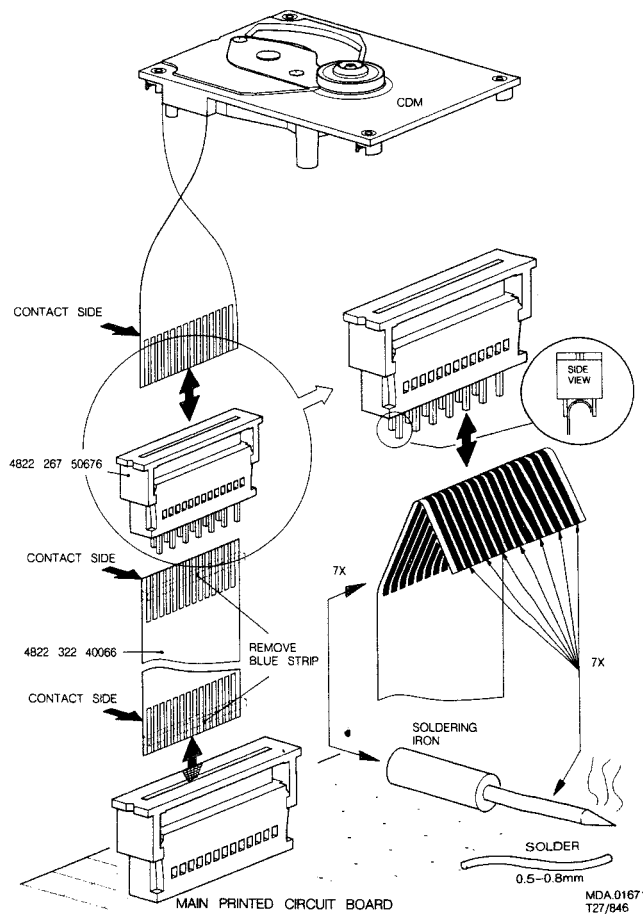
REPLACEMENT OF TRANSFORMER FUSE

- Remove top cover.
- Remove the transformer
- Now the transformer fuse is accessible.

WORKING WITH THE FAULTFINDING TREE

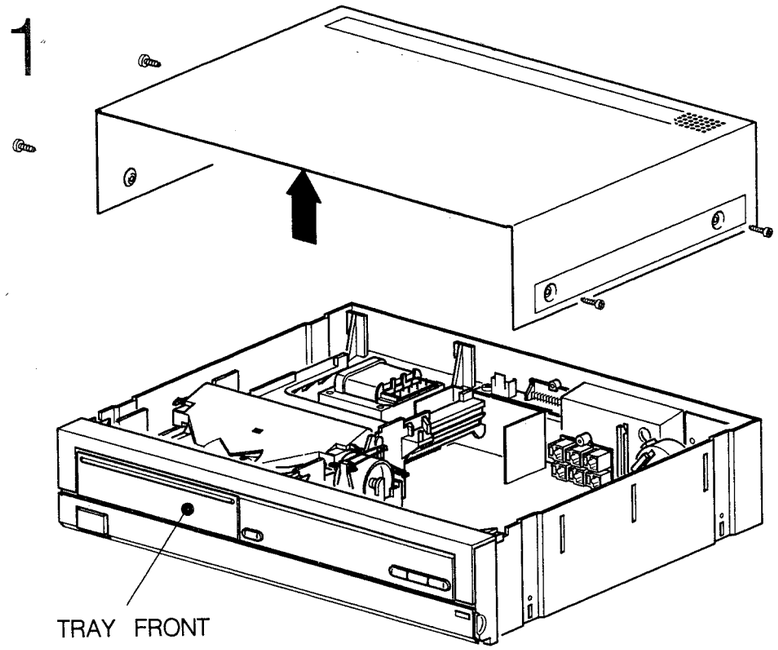
Follow the path of the faultfinding tree, beginning at the top left. Perform the actions you come across in the various blocks.
Look at the various side branches to find out if the information you see there applies to your problem. If, for instance, you find the indication display , this means that no picture appears on the display. If you establish this fault, follow the branch and perform the recommended actions. Check the components mentioned. In a number of branches further reference is made to measurements you could carry out. These measurements are explained in several tables further on in this manual.

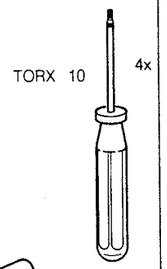
EXTENSION CABLE



DISASSEMBLY OF THE CABINET AND LOADING

1





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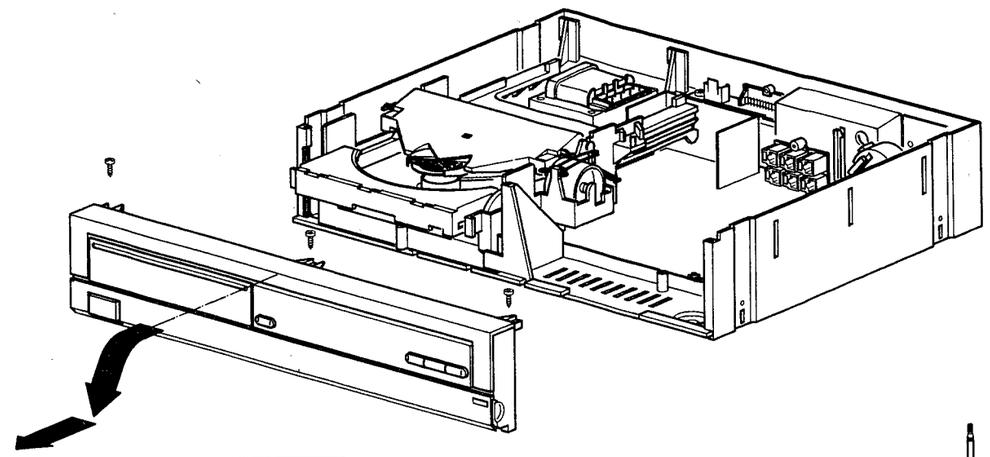

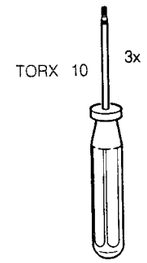

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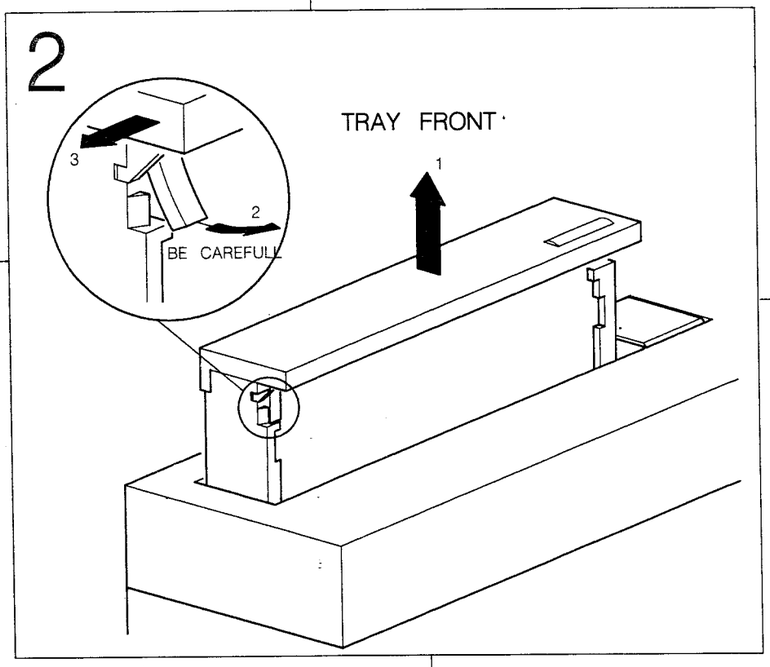

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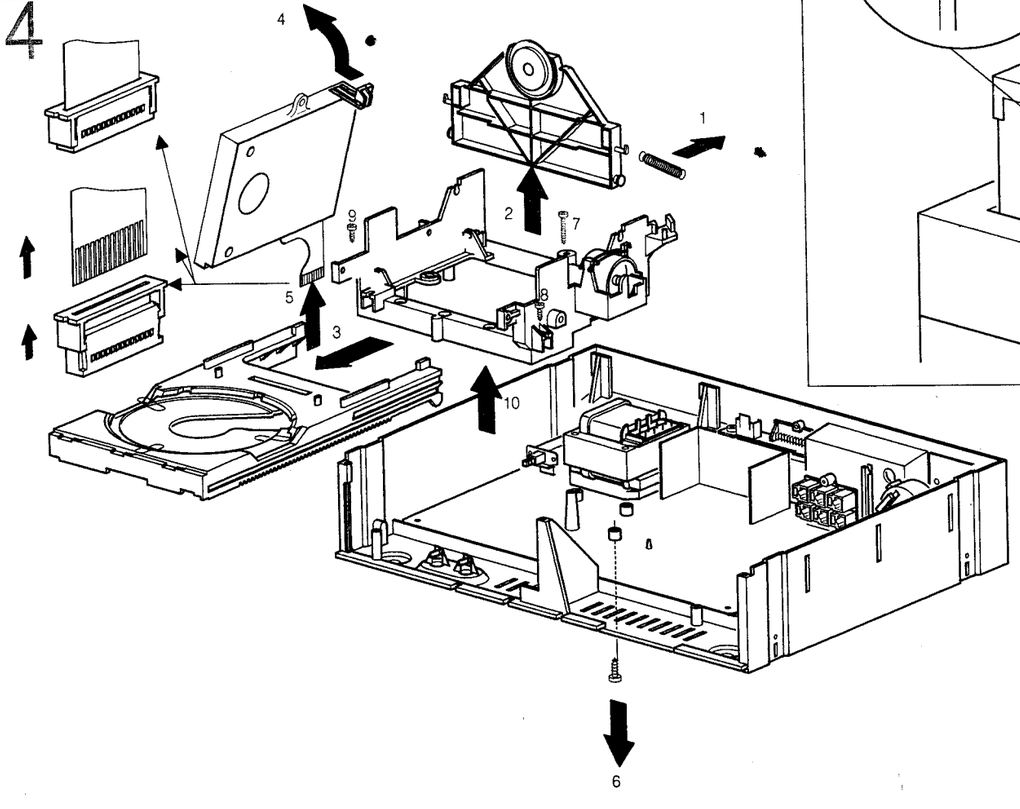

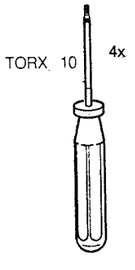

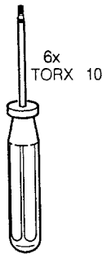

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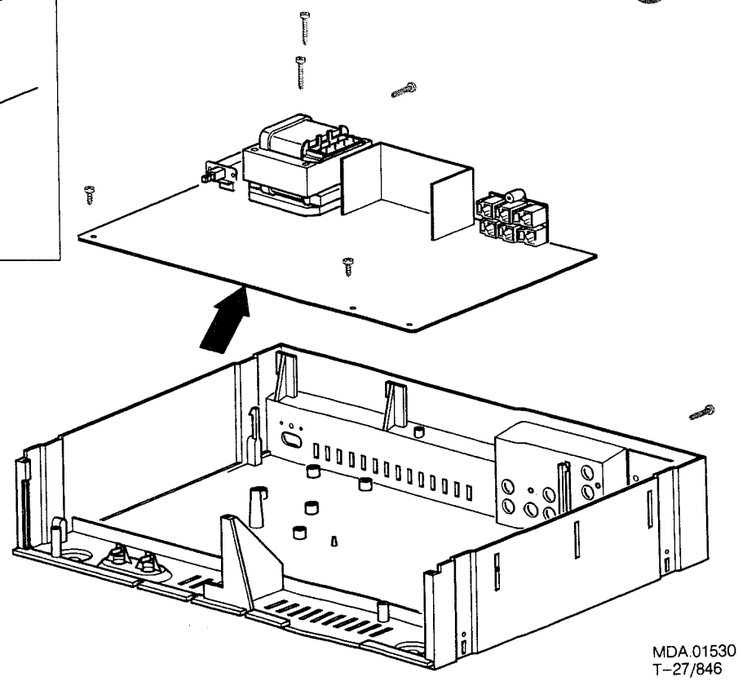

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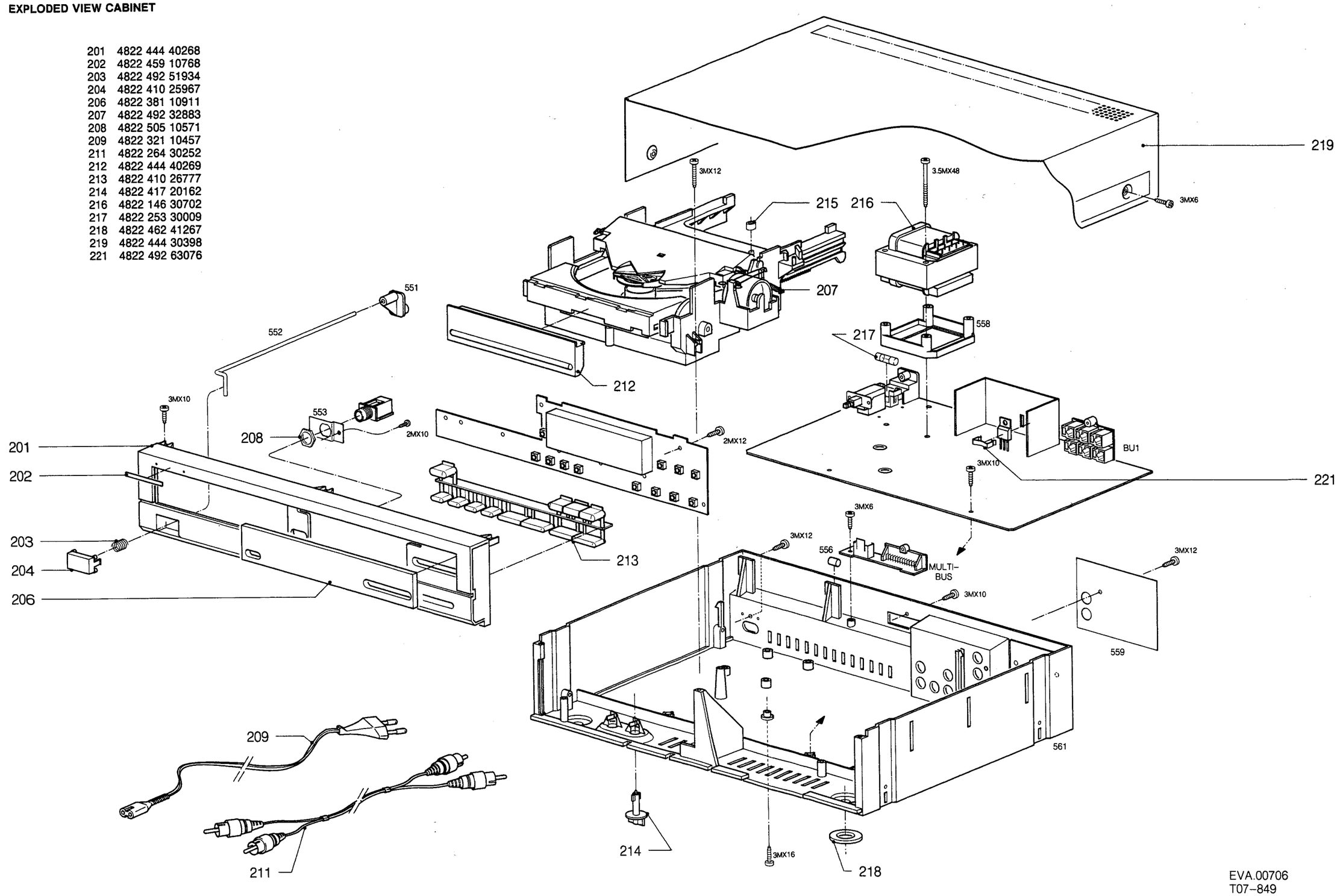
T-27/846

EXPLODED VIEW CABINET

201	4822 444 40268
202	4822 459 10768
203	4822 492 51934
204	4822 410 25967
206	4822 381 10911
207	4822 492 32883
208	4822 505 10571
209	4822 321 10457
211	4822 264 30252
212	4822 444 40269
213	4822 410 26777
214	4822 417 20162
216	4822 146 30702
217	4822 253 30009
218	4822 462 41267
219	4822 444 30398
221	4822 492 63076



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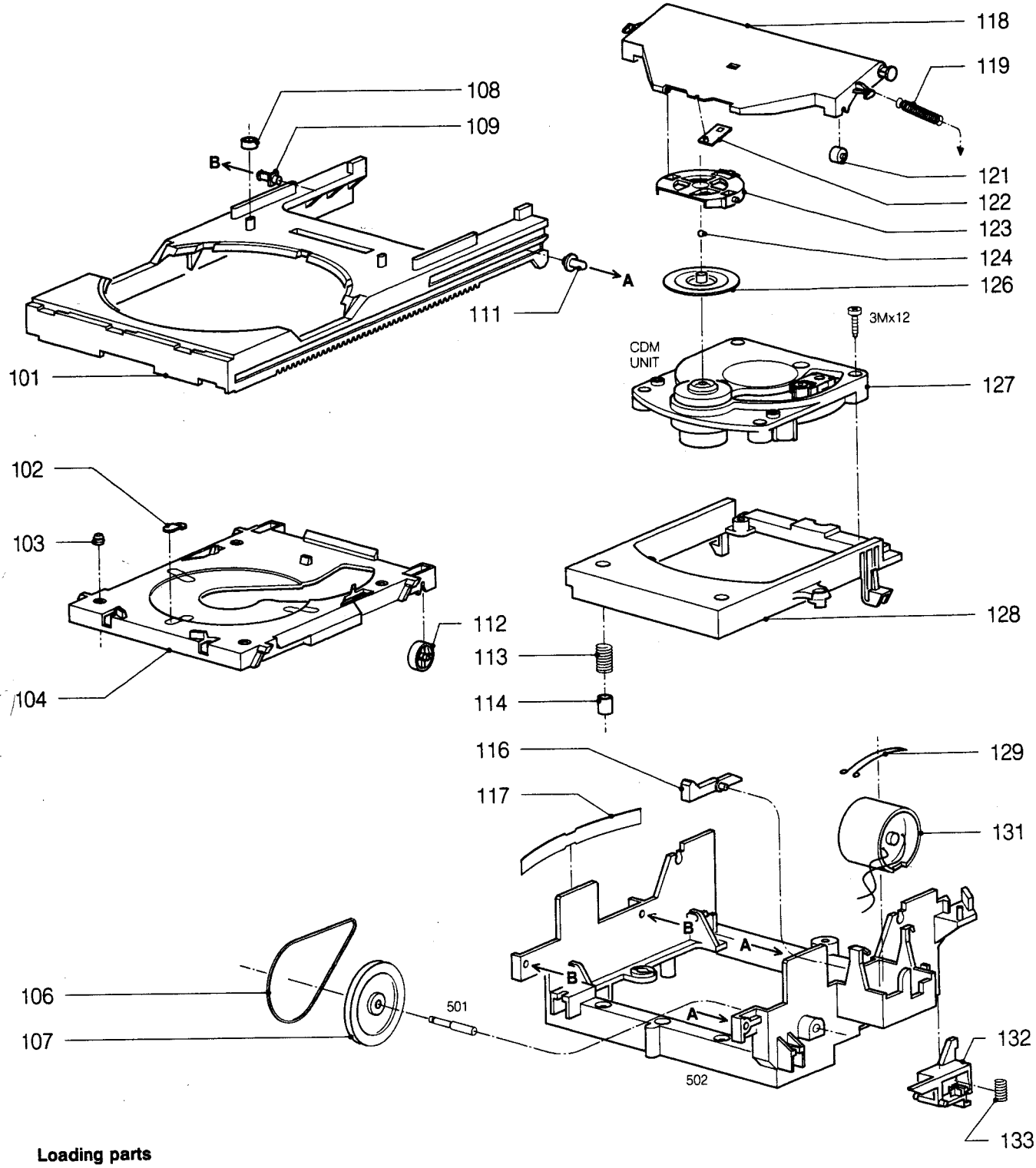
T07-849



Loading parts

101	4822 444 50603	119	4822 492 32883
102	4822 325 50176	121	4822 528 90639
103	4822 325 50177	122	4822 466 92257
104	4822 466 92251	123	4822 402 61207
106	4822 358 10115	124	4822 520 40177
107	4822 522 32359	126	4822 530 80503
108	4822 532 51518	127	4822 691 30209
109	4822 402 61081	128	4822 402 61196
111	4822 402 61132	129	4822 492 63746
112	4822 528 90638	131	4822 361 20998
113	4822 492 51902	132	4822 402 50244
114	4822 466 61587	133	4822 492 51935
116	4822 402 61107	502	4822 464 50715
117	4822 492 63659		
118	4822 444 60568		

CAUTION
INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM
3104 106 75942

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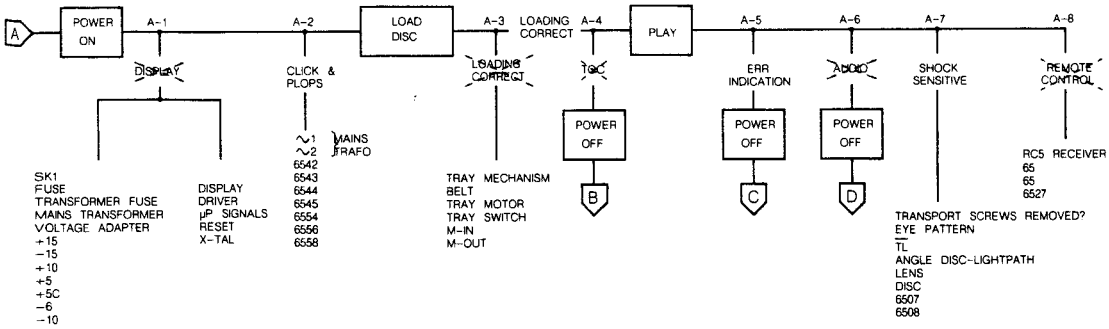
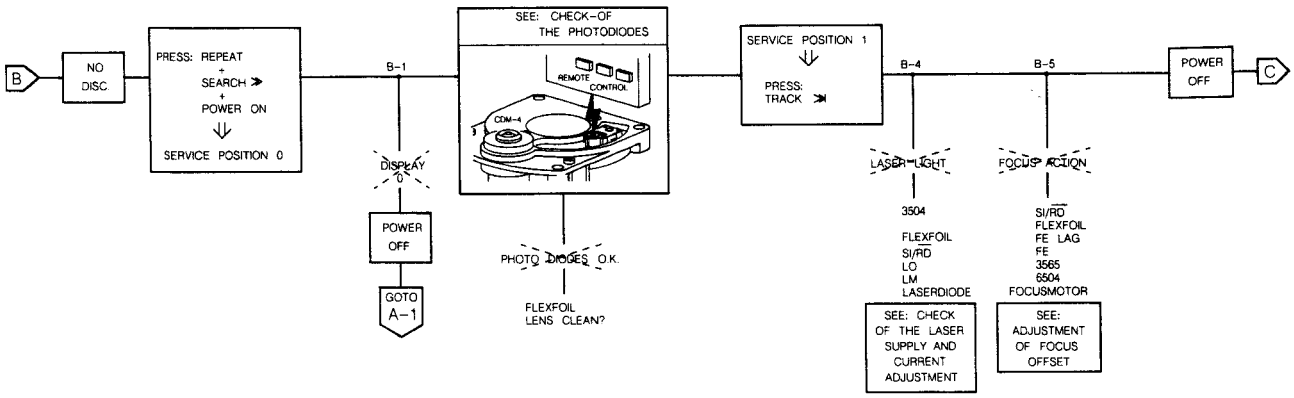
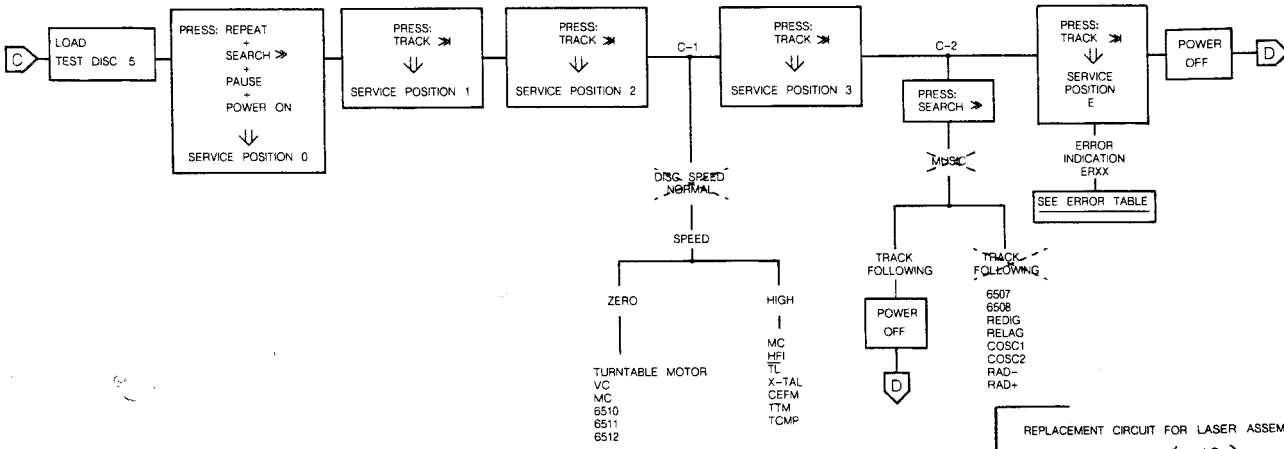
TROUBLE SHOOTING

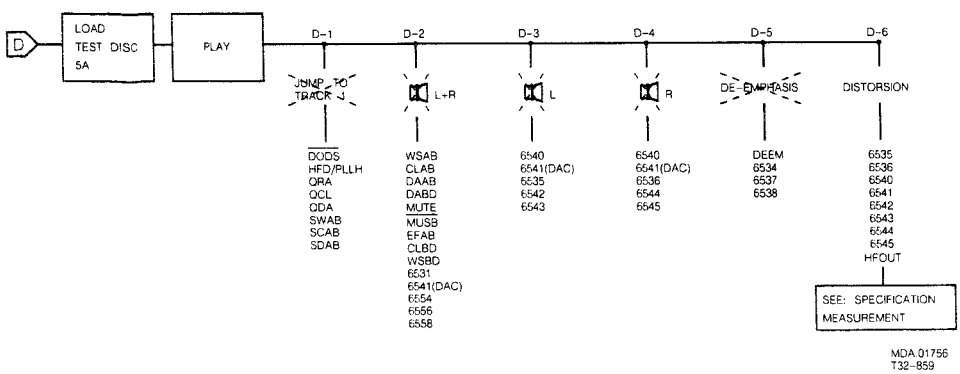
TROUBLE SHOOTING (FAULT FINDING TREE)

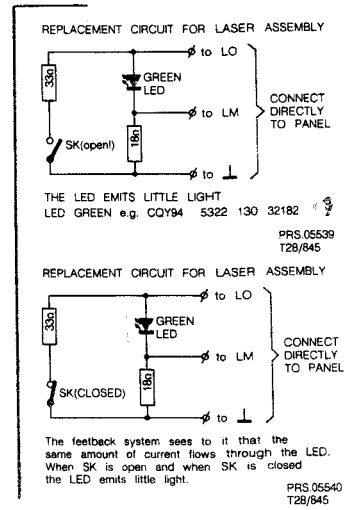
START-UP PROCEDURE











A-1 µP - SIGNALS

Signal	Mode	◇			Remarks
Reset	Power on	100		Pulse "high"	
X-TAL	Stand-by	101		4 MHz	
TRAY IN	Open/close	83		"high"	"high" when tray is closing
TRAY OUT	Open/close	83A		"low"	"low" when tray is opening
$\overline{ATSB}$	DISC, SEARCH	89		"low"	
$\overline{MUTE}$	Power on, play	67		Activity	"high" when starting up

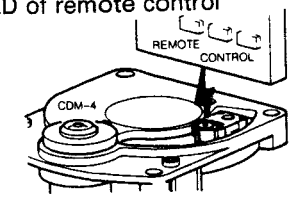
T-22297A

B-2 B0, B1, B2, B3 SIGNALS

Signal	Mode	◇			Remarks
B0	Service position 0 or 1; search ≫	36		"low"	
	Service position 0 or 1; search ≪	36		"low"	
B1	Service position 0 or 1; search ≫	34		"high"	
	Service position 0 or 1; search ≪	34		"high"	
B2	Service position 0 or 1; search ≫	33		"low"	
	Service position 0 or 1; search ≪	33		"high"	
B3	Service position 0 or 1; search ≫	32		"high"	
	Service position 0 or 1; search ≪	32		"high"	

T-22297B

B-3 CHECK OF THE PHOTODIODES

Step	Signal	Mode	◇	∅			Remarks
1	–	power on	◇4 ◇6 ◇7 ◇8	–	–	See drawing 38314A12	Signal depends on Distance lens ↔ IR LED of remote control 

T-22297C

B-4 CHECK OF LASER SUPPLY

The laser, the lasersupply plus the monitor diode form a feedback system.
A defect in the lasersupply may result in the destruction of the laser. If, in that case, the laser is replaced, (= complete D.C.M.-unit) the new laser will also become defective. However, it is impossible to check and repair a feedback system if a link is missing. For this reason the laser supply can be checked with the replacement circuit for laser assembly.

Step	Signal	Mode	◇	∅			Remarks
1	LO	serv. pos. 2 SK	◇9 Ⓥ	–	1.8<V <2.3	–	PRS05539
	LM		◇11 Ⓥ	–	170<mV <220	–	
2	LO	serv. pos. 2 SK	◇9 Ⓥ	–	1.8<V <2.3	–	PRS05540
	LM		◇11 Ⓥ	–	170<mV <220	–	
3	LO	Power on	◇9 Ⓥ	–	0V ± 0.2V	–	No light

T-22297

B-4 LASER CURRENT ADJUSTMENT

Step	Signal	Mode	◇	∅	▭	⊓	Remarks
1	–	Power off	11 — Ω	R3520	1kΩ	–	Pre-adjustment Ohmic value
2	Eye-pattern HF	Power on Test disc 5 play	pin 25 decoder 1 (SAA7210)	–	–	See drawing 37017B8	IF no signal see "start up procedure"
3	laser current ≙ voltage across R3501	Test disc 5 play track 1	1 — V — 2	R3520	50 mV DC	–	–

T-22297E

B-5 ADJUSTMENT OF FOCUS-OFFSET

Step	Signal	Mode	◇	∅	▭	⊓	Remarks
1	–	Power on	–	R3569	–	–	adjust for optical mid-position of the focus motor
2	FE LAG	Play Test disc 5 Track 1	27	R3569	400mV ± 40 mV DC	–	fine adjustment

T-22297F

B-5 FOCUS ACTION

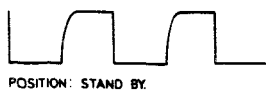
Signal	Mode	◇	▭	⊓	Remarks
SI/$\overline{RD}$	Service position 1 when repeating start up procedure	21		pulses "low"	See drawing MDA.01403
FE	Service position 1, no disc	26			See drawing MDA.01413
FE-LAG	Test disc 5A, play	27			See adjustment of focus-offset

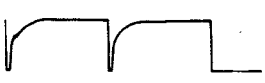
T-22297G

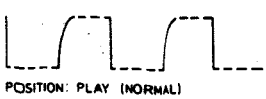
C-1 HIGH SPEED DISC ROTATION

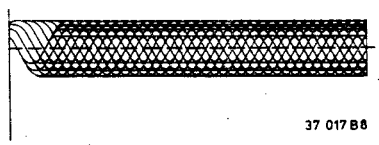
Signal	Mode	◇	▭	⊓	Remarks
$\overline{TL}$	Test disc 5, play or service position 2	13		pulses "low"	When the disc is slowly braked by hand
HFI	Test disc 5, play or service position 2	65			See drawing: 37017B8
X-tal	Test disc 5A, play or service position 2	69		11.28 MHz	
CEFM	Test disc 5A, play or service position 2	68		4.32 MHz	
MC	Test disc 5, play or service position 2	81			See drawing: 38849A12

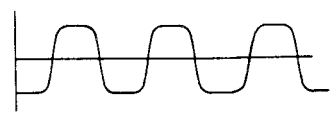
T-22297H

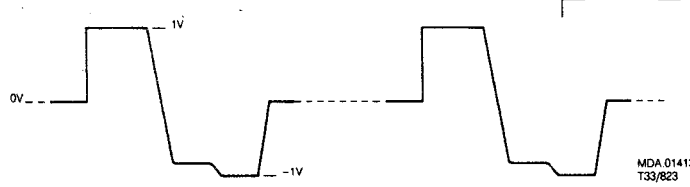












C-2 TRACK FOLLOWING

Signal	Mode	◇			Remarks
RE dig	Test disc 5, play or service position 3	37		pulses "high"	When the disc is slowly braked by hand
RE lag	Test disc 5, play or service position 3	41		400 Hz ↔ 500 Hz	Pulses during search
C osc1	Test disc 5, play or service position 3	30		650 Hz	
C osc2	Test disc 5, play or service position 3	31		650 Hz	

T-22297I

D1 JUMP TO TRACK 1

Signal	Mode	◇			Remarks
$\overline{\text{DODS}}$	Test disc 5A search ≫ or search ≪	19			See drawing MDA.01143
HFD/$\overline{\text{PLLH}}$	Test disc 5A, track 15, play	23		pulses "low"	See drawing MDA.00240 also pulses when the disc is slowly braked by hand
QRA	Test disc 5A, play	75			} See drawing MDA.00453
QDA	Test disc 5A, play	77			
QCL	Test disc 5A, play	76			
SWAB/SSM	Test disc 5A, play	78			See drawing MDA.00239
SCAB	Test disc 5A, play	79			See drawing MDA.00239
SDAB	Test disc 5A, play	80			See drawing MDA.00239

T-22297J

D-2 NO AUDIO OUTPUT LEFT+RIGHT

Signal	Mode	◇			Remarks
WSAB	Disc, play	71			See drawing 38847C12
CLAB	Disc, play	72			See drawing 38847C12
DAAB	Disc, play	73		activity	See drawing 38847C12
EFAB	Testdisc 5A	74		pulses "high"	When the disc is slowly braked by hand
CLBD	Disc, play	87			See drawing 38848C12
DABD	Disc, play	86		activitiy	See drawing 38848C12
WSBD	Disc, play	85			See drawing 38848C12
$\overline{\text{MUSB}}$	Disc, play	90		"high"	Pause, next, prev, stop: "low"

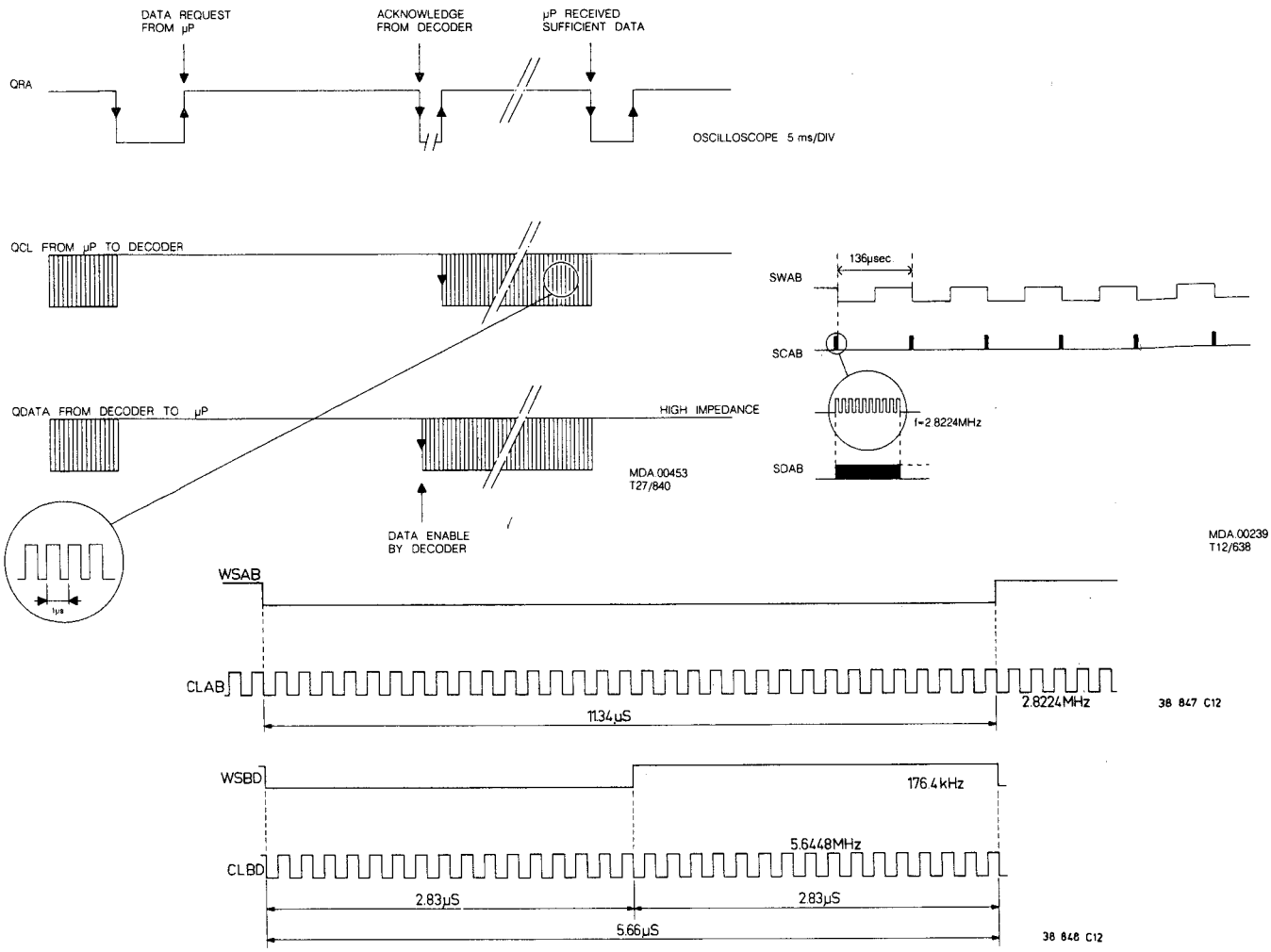
T-22297I

POSITION PLAYER	POWER ON	SERVICE POSITION 3 POSITION PLAY	PLAY	SEARCH, PAUSE
$\overline{\text{DODS}}$ SIGNAL	"LOW"	"HIGH"	"HIGH"	

MDA.01143
T12 -651

HFD

MDA.00240
T07-804



Initiation of the servicing programme of the µP

- **Servicing position "0"**

Simultaneously depress the SEARCH», PAUSE and REPEAT keys. Keep these three keys depressed while the mains voltage is switched on.
This is the STAND-BY mode, "0000P 105" appears on the display.

In this position it is possible to move the arm by means of the SEARCH »and SEARCH« keys with a minimum of torque to the inside and outside respectively.
This makes it possible to control the free motion of the arm across the length of the disc.

- **Servicing position "1"**

From servicing position "0" the player can be brought in servicing position 1" by depressing the TRACK/INDEX ▷▷| key.

In this state the laser emits light and the objective starts to focus. When the focal point has been reached, "0001P 105" appears on the display.

In service mode "1" the arm can be moved across the disc by means of the SEARCH» and SEARCH« keys.

- **Servicing position "2"**

To be reached by depressing the TRACK/INDEX ▷▷| key after servicing position "1" has been reached.

The turntable motor starts to run

On the display appears "0002P 105".

In preparation of the transition to servicing position "3" the arm is sent to the centre of the disc.

- **Servicing position "3"**

To be reached by depressing the TRACK/INDEX ▷▷| key after servicing position "2" has been reached.

The radial control is switched on. $\overline{\text{MUSB}}$ is high so that the music information **is released**.

On the display appears "0003P 105".

(Dependent on the length of the lead-in track music will be reproduced after approx. 1 min. when a disc has been inserted).

In this state it is possible to move the arm by means of the SEARCH » key to the outside and to the inside, by means of the SEARCH «.

Now the motion is controlled by the µP and the arm moves by steps of 64 tracks as long as the key is depressed.

If servicing position 3 is disturbed (e.g. braking or removing the disc) the player reassumes servicing position "0".

The servicing programme can be left by switching the mains switch (POWER ON/OFF) off and on (Hardware reset).

D-5 DEEM CIRCUIT

Signal	Mode	◇			Remarks
DEEM	Test disc 5A: track 14 PLAY track 15 PLAY	84		"low" "high"	See testpoint 92 and 91 on DEEM circuit
Testpoint 92	Test disc 5A track 14	92		LF signal	
Testpoint 92	Test disc 5A track 15	92		No signal	
Testpoint 91	Test disc 5A track 14	91		LF signal	
Testpoint 91	Test disc 5A track 15	91		No signal	

T-22297L

D-6 SPECIFICATIONS MEASUREMENT

Signal	Mode	◇			Remarks
BU2-L	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play, total harmonic distorsion	filter output	See technial data		See drawing 30459A12
BU2-L	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12
BU2-R	Test disc 3, play signal-to-noise ratio	filter output	See technial data		See drawing 30459A12

T-22297M

D-9 DOBM DIGITAL OUTPUT

Signal	Mode	◇			Remarks
DOBM	Test disc 5A	88			See drawing MDA.00238

T-22297N

Specification measurement

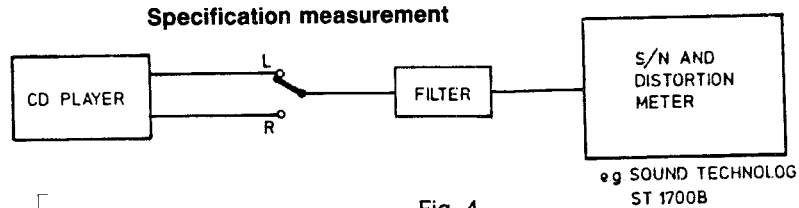
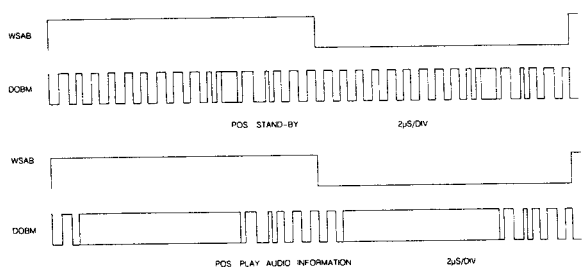


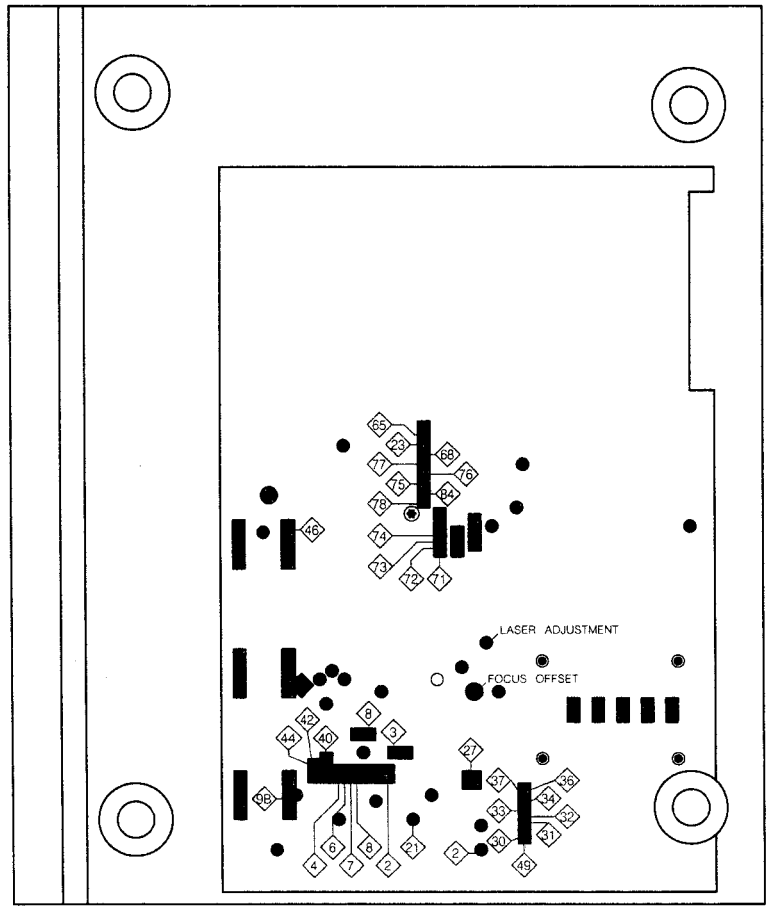
Fig. 4



MDA.00238
T07/733

To measure the specification use can be made of audio test disc 4822 397 30085.
Use 13th order filter 4822 395 30204 to measure (see Fig.4):
- Total harmonic distortion (THD)
- Intermodulation distortion
- Signal-to-noise ratio (S/N)

30 459 A12



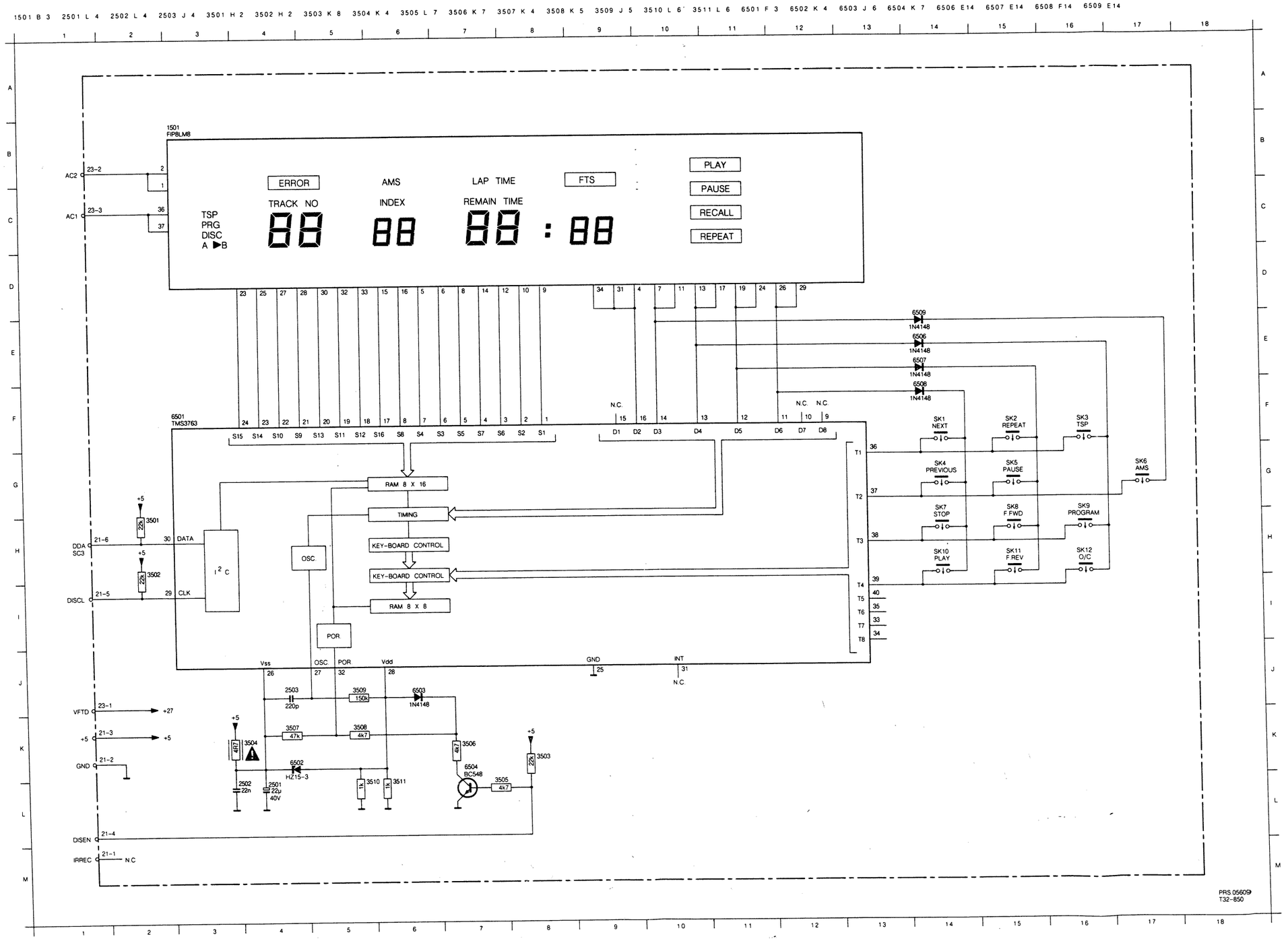
ERROR TABLE

System errors

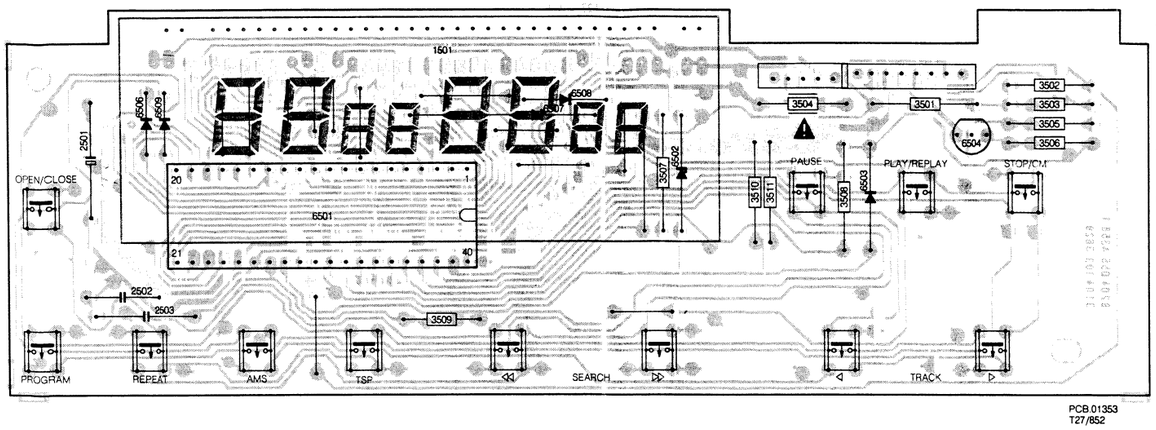
Indication	Cause	Check
Er 01	No RD	$\overline{Si}$, Sc, RD, Photodiode signal processor
Er 02	No $\overline{TL}$ pulse at start-up	$\overline{TL}$, HF, Photodiode signal processor, CD disc present
Er 03	No lead-in track found	CD disc, radial arm position, REdig, Radial error processor
Er 04	Too many $\overline{TL}$ pulses in PLAY	CD disc, $\overline{HFD}$
Er 05	$\overline{TL}$ pulse > 50 msec. in PLAY	CD disc, HF in, photodiodes
Er 06	No $\overline{TL}$ pulse within 0.5 sec. during track jumping	RE-lag circuit
Er 07	Subcoding error during PLAY	HF
Er 08	TOC error	CD disc, turntable motor control, radial arm position

Operating errors

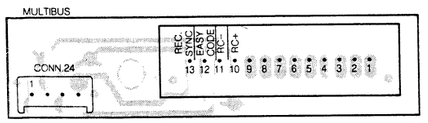
Er 30 "NEXT" key operated during the last track, with "REPEAT" turned off.
Er 31 "PREVIOUS" key operated during the first track, with "REPEAT" turned off.
Er 32 Index selected before a track has been selected.
Er 33 The selected index number does not exist on this disc.
Er 34 Programme survey requested; no programme present.
Er 35 The programme memory is full.
Er 36 The programmed track is not present on this CD disc.
Er 37 The selected track is not present on this CD disc.
Er 60 End of the "FAST FORWARD" search motion.
Er 61 End of the "FAST REVERSE" search motion.


1501 B 3 2501 L 4 2502 L 4 2503 J 4 3501 H 2 3502 H 2 3503 K 8 3504 K 4 3505 L 7 3506 K 7 3507 K 4 3508 K 5 3509 J 5 3510 L 6 3511 L 6 6501 F 3 6502 K 4 6503 J 6 6504 K 7 6506 E14 6507 E14 6508 F14 6509 E14
1501
FIP8LM8
ERROR
AMS
LAP TIME
FTS
TRACK NO
INDEX
REMAIN TIME
TSP
PRG
DISC
A ▶B
PLAY
PAUSE
RECALL
REPEAT
6501
TMS3763
RAM 8 X 16
TIMING
KEY-BOARD CONTROL
KEY-BOARD CONTROL
RAM 8 X 8
OSC.
POR
I 2 C
6509 1N4148
6506 1N4148
6507 1N4148
6508 1N4148
6503 1N4148
6504 BC548
6502 HZ15-3
SK1 NEXT
SK2 REPEAT
SK3 TSP
SK4 PREVIOUS
SK5 PAUSE
SK6 AMS
SK7 STOP
SK8 F.FWD
SK9 PROGRAM
SK10 PLAY
SK11 F.REV
SK12 O/C
AC2
AC1
DDA SC3
DISCL
VFTD
DISEN
IRREC
GND
INT
N.C.
PRS 05609
T32-850

CS 20 174



PCB.01353
T27/852



PCB.01255
T27/843

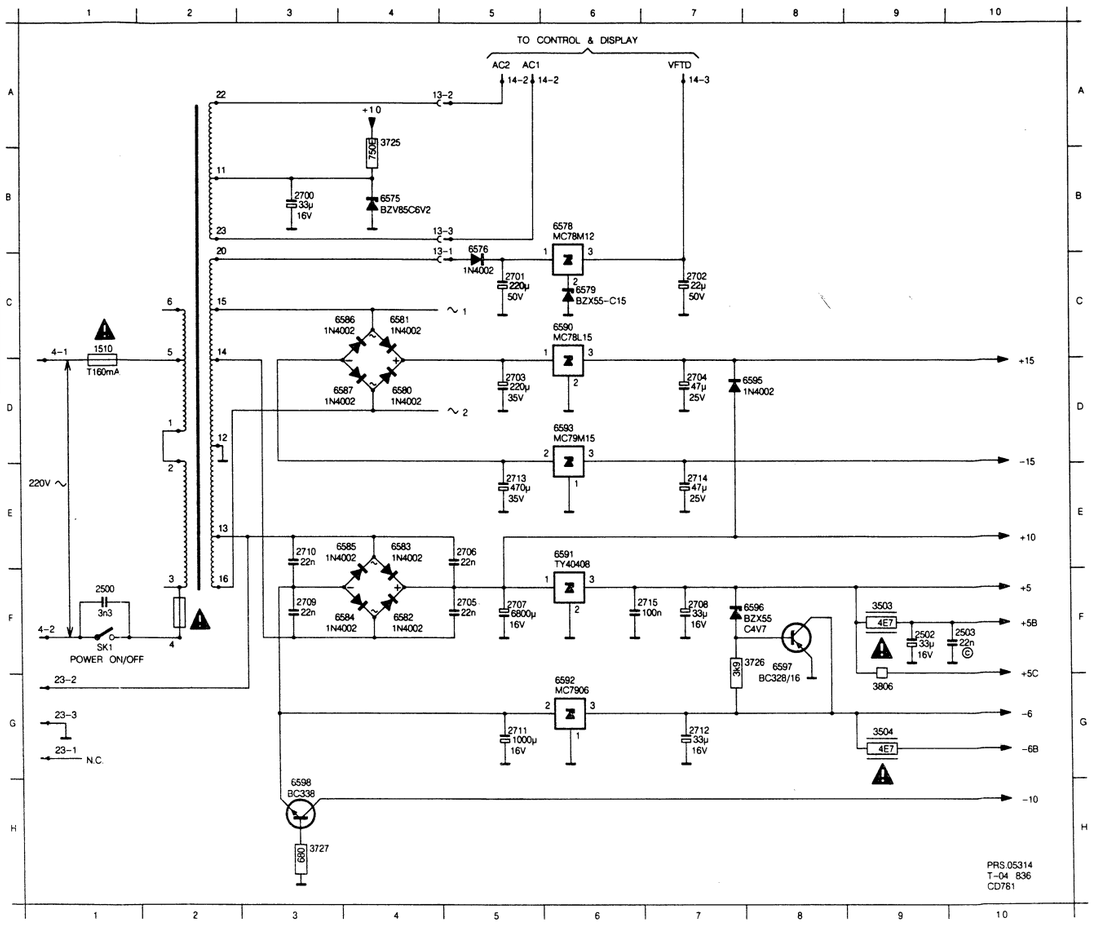
VOOR PRINTSPOOR ZIE 44 324B11

CONTROL & DISPLAY PARTS

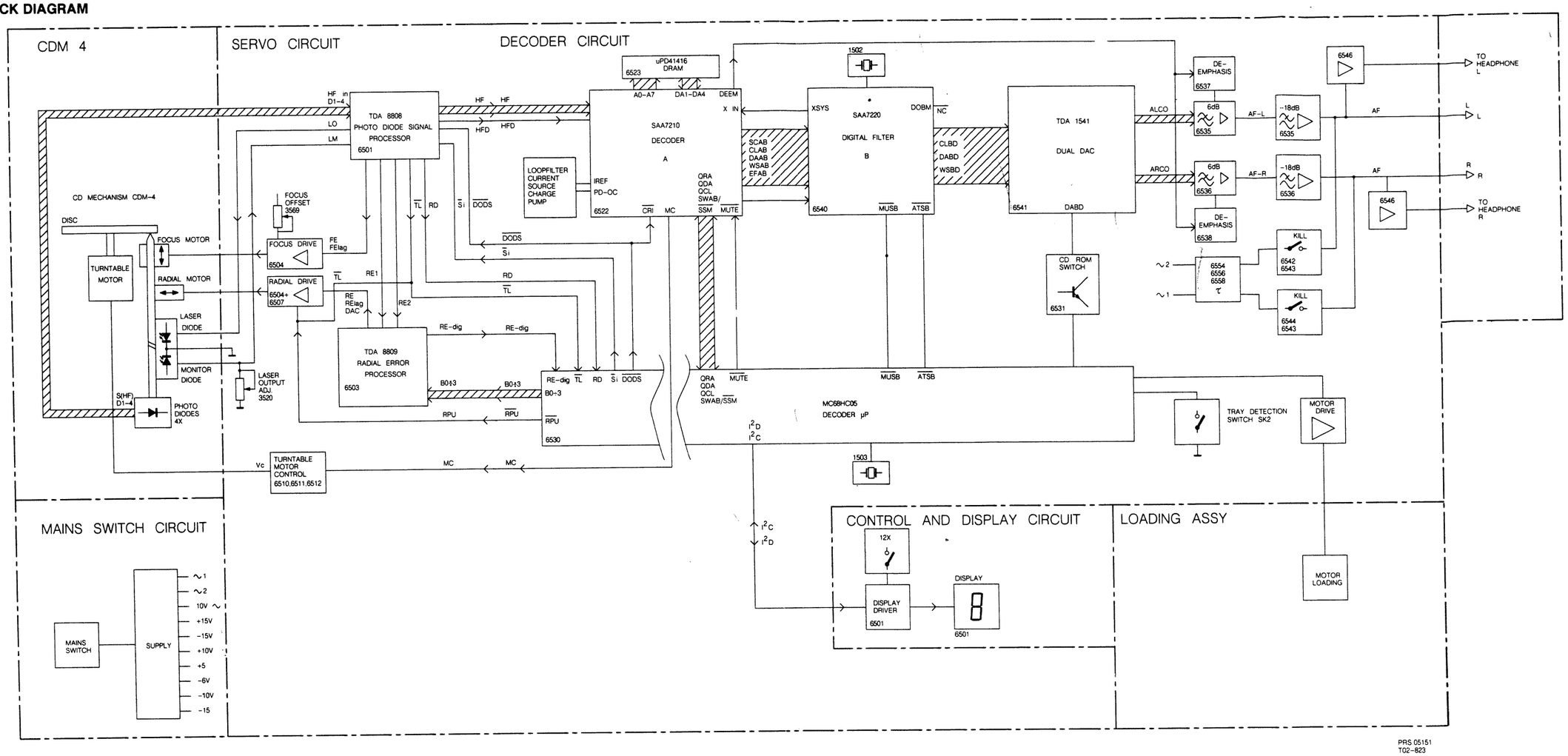
Tact switch		4822 276 12465
Display	1501	4822 130 90457
22 µF 40V	2501	5322 124 21643
22 nF 16V	2502	4822 122 10166
220 PF 50V	2503	4822 122 10172
4R7 SAFETY	3504	4822 111 30499
TMS3763CNL	6501	4822 209 73149
BZX55-C15	6502	4822 130 81086
1N4148	6503	4822 130 30621
BC548	6504	4822 130 40938

POWER SUPPLY

1510	C 1	2700	B 3	2704	D 7	2708	F 7	2712	G 7	3503	F 9	3727	H 3	6578	B 6	6582	F 4	6586	C 4	6592	G 6	6597	F 8
2500	F 1	2701	C 5	2705	F 5	2709	F 3	2713	E 5	3504	G 9	3806	G 9	6579	C 6	6583	E 4	6587	D 4	6593	D 6	6598	H 3
2502	F 9	2702	C 7	2706	E 5	2710	E 3	2714	E 7	3725	A 4	6575	B 4	6580	D 4	6584	F 4	6590	C 6	6595	D 8	SK1	F 1
2503	F10	2703	D 5	2707	F 5	2711	G 5	2715	F 7	3726	F 8	6576	B 5	6581	C 4	6585	E 4	6591	E 6	6596	F 8		



BLOCK DIAGRAM

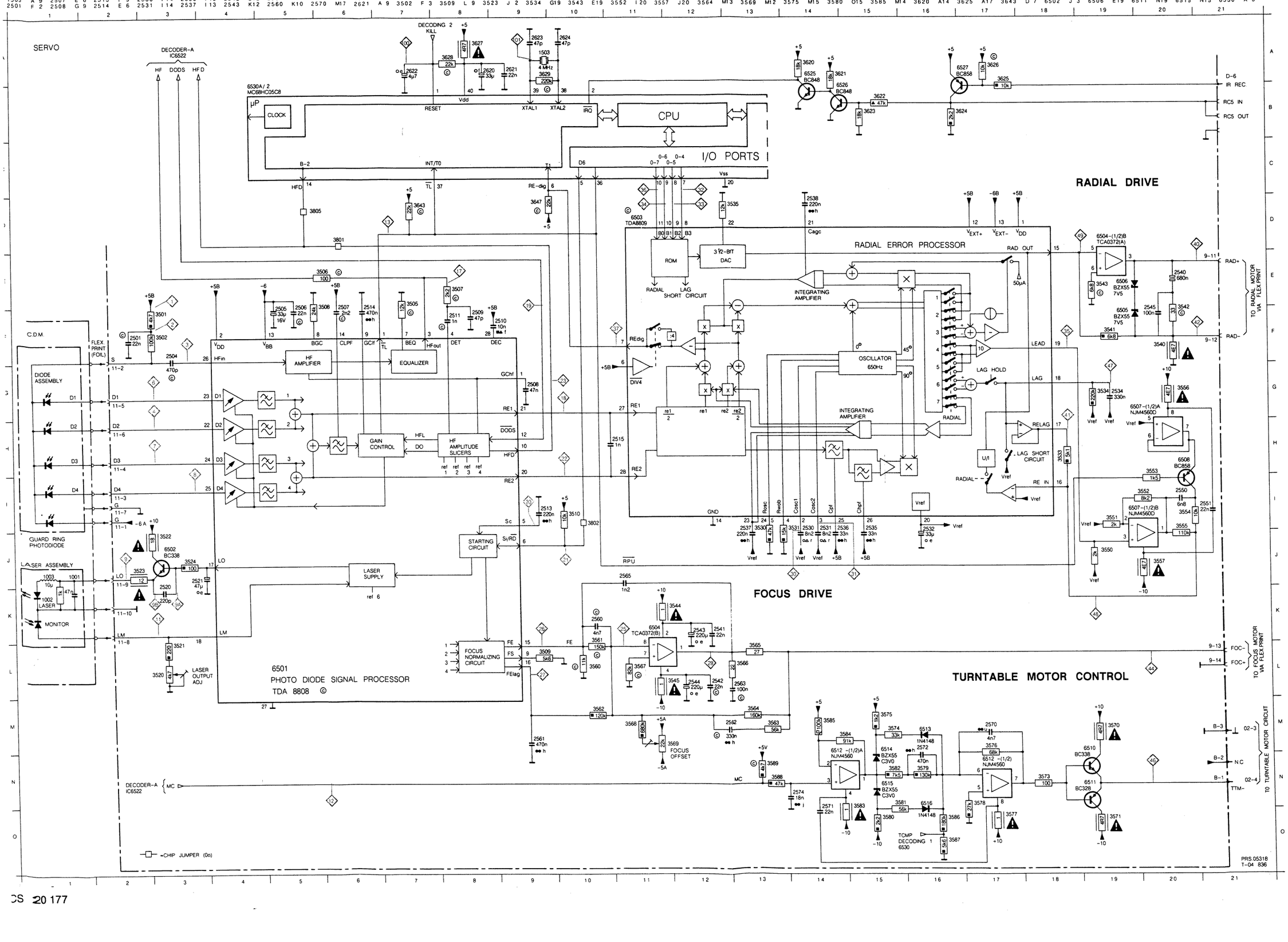


AGC – Automatic Gain Control
B0-B3 – Control bits for radial circuit
BEQ – Equalizer reference current input
BGC – DC and LF gain control reference input
Cosc1 – Capacitor wobble oscillator
Cosc2 – Capacitor wobble oscillator
DEC – Decoupling input of inkruat bypass
DET – HF detector voltage input
DIV4 – Divide by 4 input
$\overline{DODS}$ – Drop out detector suppression
D1÷4 – Photodiode currents
FE – Focus error signal
FE lag – Focus error signal for LAG network
HF – HF output for DEMOD
HFD – HF detector output for DEMOD
HF-in – HF current input to HF amplifier
HF-out – HF amplifier and equalizer voltage output
LM – Laser monitor diode input
LO – Laser amplifier current output
MC – Motor control signal
offset IN – Offset control input
offset OUT – Offset control output
PLLH – PLL on hold output
RADout – output of RE2-RE1 input
RE – Radial error signal (Amplified RE_2-RE_1 currents)

Rosc – Resistor wobble oscillator
Rwob – Wobble generator input
RE1 – Radial error signal 1 (summation of amplified currents D_3 and D_4
RE2 – Radial error signal 2 (summation of amplified currents D_1 and D_2
RE dig – Radial error digital
RE lag – Radial error signal for LAG network
Sc – Starting up capacitor input
Si/$\overline{RD}$ – On/off control for laser supply and focus circuit. Ready signal, Starting up procedure succesful.
$\overline{TL}$ – Track loss output signal
TTM– – Control voltage for turntable motor
TTM+ – Control voltage for turntable motor
Vext– – Supply connection
Vext+ – Supply connection
TCMP – Turntable control motor pulse

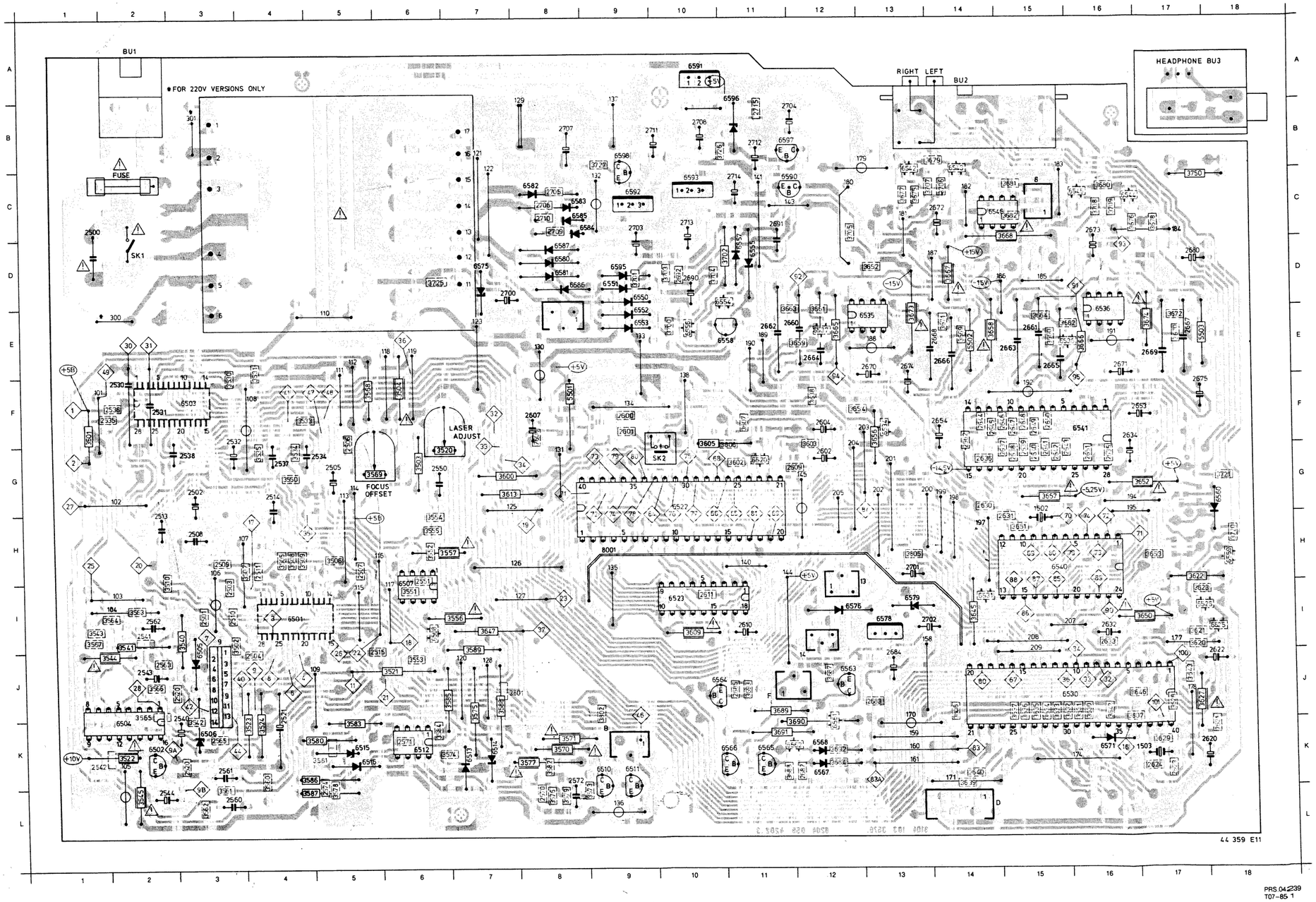
$\overline{ATSB}$ – Attenuation of Audio level in Search position (Cueing)
CD ROM Switch – Digital Data information on disc signal
CEFM – Clock Eight-to-Fourteen Modulator
CLAB – Clock signal Decoder-A to Filter-B
CLBD – Clock signal Filter-B to DAC
$\overline{CREF}$ – Reference Current
$\overline{CRI}$ – Counter Reset Inhibit
DAAB – Data signal Decoder-A to Filter-B
$\overline{DABD}$ – Data signal Filter-B to DAC
$\overline{DEEM}$ – Deemphasis
DOBM – Digital out signal
$\overline{EFAB}$ – Error flag Decoder-A to Filter-B
$\overline{MUTE}$ – Mute signal

$\overline{MUSB}$ – Soft Mute signal
PD/OC – Phase detector - oscillator control
QCL – Q-channel Clock signal
QDA – Q-channel Data signal
QRA – Q-channel Request Aknowledge
SCAB – Subcode clock Decoder-A to Filter-B
SDAB – Subcode data Decoder-A to Filter-B
SWAB/$\overline{SSM}$ – Subcode Word/Start-stop motor signal
WSAB – Word select Decoder-A to Filter-B
WSBD – Word Select Filter-B to DAC
XIN – Oscillator signal in Decoder-A
XSYS – Oscillator signal out Filter-B


SERVO
DECODER-A IC6522
HF DODS HFD
6530A/2 MC68HC05C8
µP
CLOCK
RESET
Vdd
XTAL1
XTAL2
IRQ
CPU
I/O PORTS
DECODING 2 KILL
+5
4R7
3627
3628 22k
2622 4µ7
2620 33µ
2621 22n
1503 4 MHz
2623 47p
2624 47p
3629 220k
B-2
INT/T0
T1
D6
0-6 0-4
0-7 0-5
Vss
HFD
3805
3801
TL
RE-dig
3647 22k
3643 22k
6503 TDA8809
3535 12k
2538 220n
Cagc
ROM
3 1/2-BIT DAC
RADIAL LAG SHORT CIRCUIT
INTEGRATING AMPLIFIER
RADIAL ERROR PROCESSOR
RAD OUT
50µA
V_EXT+ V_EXT- V_DD
+5B -6B +5B
RADIAL DRIVE
6504-(1/2)B TCA0372(A)
6506 BZX55 7V5
6505 BZX55 7V5
3543 6k8
3541 6k8
2540 680n
2545 100n
3542 33
3540 4k7
RAD+
RAD-
9-11
9-12
TO RADIAL MOTOR VIA FLEX PRINT
C.D.M.
FLEX PRINT (FOIL)
DIODE ASSEMBLY
D1 D2 D3 D4 G
GUARD RING PHOTODIODE
LASER ASSEMBLY
1003 10µ
1001 47µ
1002 LASER
MONITOR
6502 BC338
3522 18
3524 100
3523 12
2520 220p
2521 47µ
LO
LM
3521 220
3520 4k7
LASER OUTPUT ADJ
LASER SUPPLY
ref 6
3501 4k7
3502 100k
2501 22n
2504 470p
3506 100
2505 33µ 16V
2506 22n
3508 24k
2507 2n2
2514 470n
3505 12k
3507 2k2
2511 1n
2509 47p
2510 10n
V_DD V_BB BGC CLPF GCtl TL BEQ HFout DET DEC
HFin
HF AMPLIFIER
EQUALIZER
GCtrl
2508 47n
RE1
RE2
DODS
HFL
DO
GAIN CONTROL
HF AMPLITUDE SLICERS
ref 1 ref 2 ref 3 ref 4
HFD
2515 1n
REdig
DIV4
OSCILLATOR 650Hz
0° 45° 90°
RADIAL
LEAD
LAG
LAG HOLD
RELAG
LAG SHORT CIRCUIT
U/I
RADIAL-
RE IN
6507-(1/2)A NJM4560D
6508 BC858
6507-(1/2)B NJM4560D
3534 2k2
2534 330n
3556 4E7
3557 4E7
3553 1k5
3552 8k2
2550 6n8
2551 22n
3554 10k
3555 110k
3551 2k
3550 2k
3533 5k1
Vref
RADIAL- RE IN
D-6 IR REC.
RC5 IN
RC5 OUT
3620 18k
3621 18k
3622 47k
3623 18k
3624 2k2
3625 10k
3626 10k
6525 BC848
6526 BC848
6527 BC858
FOCUS DRIVE
6501
PHOTO DIODE SIGNAL PROCESSOR
TDA 8808
FOCUS NORMALIZING CIRCUIT
FE FS FElag
3509 5k6
3560 11k
3561 150k
2560 4n7
6504 TCA0372(B)
2543 220µ
2541 22n
2544 220µ
2542 22n
3545
3567 15k
3566 22
2563 100n
3565 27
2565 1n2
3562 120k
3568 680k
3569 22k
FOCUS OFFSET
2561 470n
2582 330n
3564 160k
3563 56k
TURNTABLE MOTOR CONTROL
3585 R100k
3584 51k
3574 33k
3575 1k2
6513 1N4148
6514 BZX55 C3V0
6515 BZX55 C3V0
3582 7k5
3581 56k
3580 2k2
6516 1N4148
3586 180k
3587 3k6
TCMP DECODING 1 6530
6512-(1/2)A NJM4560
6512-(1/2) NJM4560
2572 470n
3579 130k
2570 4n7
3576 68k
3578 22k
3577
3573 100
3589 4k7
3588 47k
2574 18n
2571 22n
3583
3570 4R7
3571 4R7
6510 BC338
6511 BC328
FOC-
FOC+
TO FOCUS MOTOR VIA FLEX PRINT
B-3 B-2 B-1
02-3 N.C 02-4
TTM-
TO TURNTABLE MOTOR CIRCUIT
DECODER-A IC6522 MC
-CHIP JUMPER (0Ω)
PRS.05318
T-04 836

MAIN PANEL

1503	K 2	2515	J14	2544	L17	2601	F10	2633	J 3	2647	F 4	2670	F 6	2703	D10	3504	F13	3533	F15	3556	I 12	3574	K13	3589	J12	3630	K 3	3650	I 2	3665	E 7	3680	C 3	3705	C 7	3807	K 2	6512	K13	6537	E 7	6556	E 9	6576	I 7	6593	C 9	
2500	D18	2520	K17	2545	J17	2602	G 7	2634	G 2	2648	F 4	2671	E 2	2704	B 7	3505	H15	3534	G15	3557	H13	3575	K12	3600	G12	3631	K 4	3651	H 4	3666	E 3	3681	C 4	3706	C 5	5501	F11	6513	L13	6538	E 3	6557	D 8	6578	I 6	6595	D10	
2501	I16	2521	K15	2550	G13	2604	F 7	2635	G 3	2649	F 4	2674	F 6	2705	C11	3507	H16	3540	I 17	3561	L16	3577	K11	3603	G 7	3633	K 4	3652	G 2	3667	D 5	3682	C 4	3707	C 5	5502	E 5	6514	K12	6540	H 3	6558	E 8	6579	B 7	6596	B 8	
2502	G16	2530	F18	2551	I 13	2607	G12	2636	G 5	2650	F 4	2675	F 1	2706	C11	3507	H16	3540	I 17	3561	L16	3577	K11	3603	G 7	3633	K 4	3652	D 6	3668	C 4	3684	K 7	3708	C 3	5503	E 1	6515	K14	6541	F 3	6560	H 1	6579	I 6	6598	B10	
2503	I16	2531	F17	2560	L16	2608	F11	2637	D 3	2651	G 3	2680	D 1	2707	B11	3508	H15	3541	J18	3562	L16	3578	L14	3605	G 9	3634	K 4	3653	H 2	3669	E 5	3687	J 7	3709	C 3	5503	G13	6516	L14	6543	B 5	6561	K 7	6580	D12	bu1	A17	
2504	J16	2532	G16	2561	K16	2609	G 7	2637	G 4	2653	F 2	2682	K 7	2708	B 9	3509	H15	3542	K16	3563	I17	3579	L11	3606	G 8	3635	K 4	3654	F 6	3670	E 2	3688	L 8	3720	H 1	5507	I13	6520	G 8	6543	B 6	6562	K 7	6581	D12	bu3	A 1	
2505	G14	2534	G15	2562	G 5	2610	I 8	2638	G 4	2654	F 5	2683	J 6	2709	C11	3510	I17	3543	I18	3580	K15	3607	F 8	3636	K 4	3656	G 6	3671	E 5	3689	K 8	3721	G 1	6501	I15	6522	G 9	6544	C 2	6563	J 6	6582	C12	q	K 4		
2506	G14	2535	F18	2562	I17	2611	I 9	2639	G 4	2660	E 7	2684	J 6	2710	C11	3520	G13	3544	J18	3565	K17	3581	K15	3609	I 9	3637	K 4	3657	G 4	3672	E 2	3690	K 7	3725	D13	6502	L17	6523	I 1	6545	C 3	6564	J 9	6583	C12	sk1	D17	
2507	H14	2536	F18	2563	J17	2621	K 1	2640	G 4	2661	E 4	2685	J 8	2711	B 9	3521	J14	3545	L17	3566	J17	3582	K11	3613	G12	3638	F 7	3658	E 4	3673	E 6	3691	K 8	3726	B 9	6503	F17	6525	I 1	6546	C 4	6565	L 8	6584	C11	sk2	G 9	
2508	H16	2537	G15	2565	K16	2623	K 2	2641	G 4	2662	E 8	2690	D 9	2712	B 8	3522	K18	3547	I12	3567	J18	3583	K14	3620	J 1	3639	L 5	3659	E 7	3674	E 2	3692	K 7	3727	B10	6504	K18	6526	I 1	6550	D10	6566	L 8	6585	C11			
2509	H16	2538	G17	2570	L11	2624	K 2	2642	G 4	2665	E 3	2691	C 7	2713	C 9	3523	K16	3550	G15	3568	F14	3584	K13	3621	I 1	3640	L 5	366	E 4	3675	C 6	3693	J 8	3750	B 1	6505	J17	6530	J 3	6551	D10	6567	L 7	6586	D11			
2510	I16	2540	K17	2571	K13	2627	C 5	2643	G 3	2666	F 5	2692	D 9	2714	C 8	3524	K16	3551	I13	3569	G14	3585	J13	3623	I 1	3642	K 3	3660	E 4	3676	C 2	3700	E 9	3801	J12	6506	K16	6531	I 5	6552	E10	6568	K 7	6587	D12			
2511	H16	2541	I17	2572	L11	2630	H 5	2644	F 5	2666	E 5	2700	D12	2715	B 8	3525	H13	3553	J13	3570	K11	3586	L14	3627	J 1	3643	J 2	3661	E 7	3677	C 6	3701	D10	3802	K10	6508	I13	6534	F 6	6553	E10	6569	H 1	6590	C 7			
2513	H17	2542	K18	2574	L15	2631	H 4	2645	F 5	2667	E 2	2701	H 6	3501	F18	3530	F16	3554	H13	3571	K11	3587	L15	3628	J 2	3645	I 5	3662	E 3	3678	C 2	3703	D 9	3805	H 6	6510	K10	6535	E 3	6555	D 8	6570	K 3	6591	A 9			
2514	H15	2543	J17	2600	F10	2632	I 3	2646	F 4	2669	E 2	2702	I 5	3502	J16	3531	E16	3555	H13	3573	L11	3588	K12	3629	K 2	3646	J 2	3663	E 7	3679	B 5	3704	D 9	3806	K 5	6511	K10	6536	E 3	6555	D 8	6575	D12	6592	C10			



PRS 042239
T07-85 1

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2500	D 1	2520	K 3	2545	J 2	2602	G12	2634	G17	2648	F15	2671	E17	2704	B12	3505	H 4	3534	G 4	3557	H 7	3575	K 7	3600	G 8	3631	K16	3651	H15	3666	E16	3681	C15	3706	C14	5501	F 8	6513	L 7	6538	E16	6557	D11	6578	I 13	6595	D 9
2501	I 3	2521	K 4	2550	G 7	2604	F12	2635	G16	2649	F15	2674	F13	2705	C 8	3506	H 5	3535	G 4	3560	L 4	3576	L 8	3602	G11	3632	K16	3652	G17	3667	D14	3682	C15	3707	C14	5502	E14	6514	K 7	6540	H16	6558	E11	6579	B12	6596	B11
2502	G 3	2530	F 2	2551	I 6	2607	G 8	2636	G15	2650	F16	2675	F18	2706	C 8	3507	H 3	3540	I 3	3561	L 3	3577	K 8	3603	G12	3633	K16	3652	D13	3668	C15	3684	K12	3708	C16	5503	E18	6515	K 5	6541	F16	6560	H18	6579	I 14	6598	B10
2503	I 3	2531	F 2	2560	L 3	2608	F 8	2637	D17	2651	G16	2680	D18	2707	B 8	3508	H 4	3541	J 2	3562	L 3	3578	L 5	3605	G11	3634	K15	3653	H17	3669	E14	3687	J12	3709	C17	5503	G 6	6516	L 6	6543	B14	6561	K12	6580	D 8	BU1	A 2
2504	J 4	2532	G 3	2561	K 3	2609	G12	2637	G15	2653	F17	2682	L12	2708	B10	3509	H 4	3542	K 3	3563	I 2	3579	L 8	3606	G11	3635	K15	3654	F13	3670	E17	3688	L12	3720	H18	5607	I 6	6520	G11	6543	B14	6562	K12	6581	D 8	BU3	A18
2505	G 5	2534	G 5	2562	G14	2610	I 11	2638	G15	2654	F14	2683	K13	2709	C 8	3510	I 2	3543	I 1	3564	I 2	3580	K 5	3607	F11	3636	K15	3656	G13	3671	E14	3689	K12	3721	G18	6501	I 4	6522	H10	6544	C17	6563	J13	6582	C 8	SK1	D 2
2506	G 5	2535	F 2	2562	I 2	2611	I 11	2639	G15	2660	E12	2684	J14	2710	C 8	3520	G 7	3544	J 2	3565	K 2	3581	K 5	3609	I10	3637	K15	3657	G16	3672	E18	3690	K12	3725	D 7	6502	L 2	6523	I10	6545	C16	6564	J10	6583	C 8	q	K15
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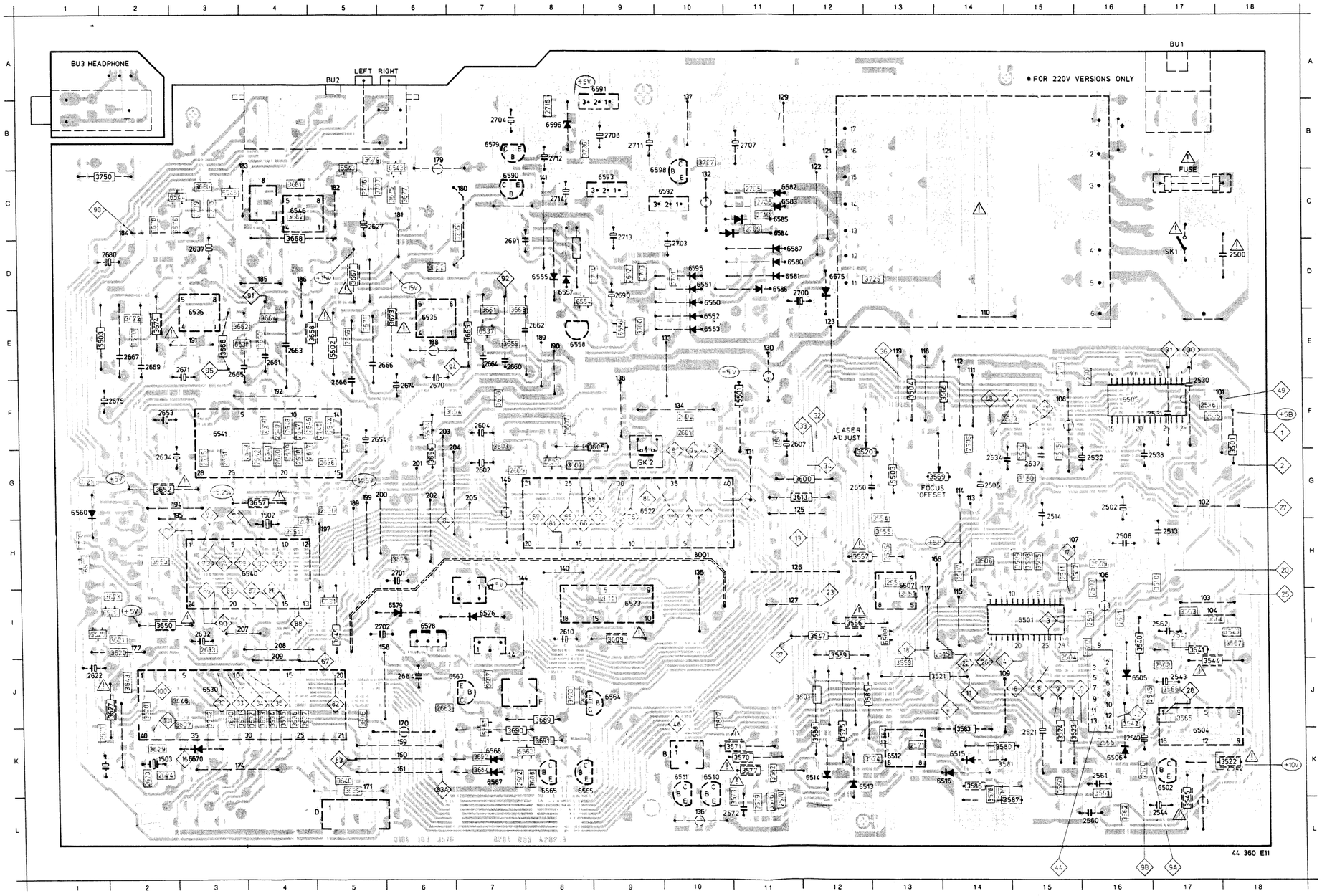
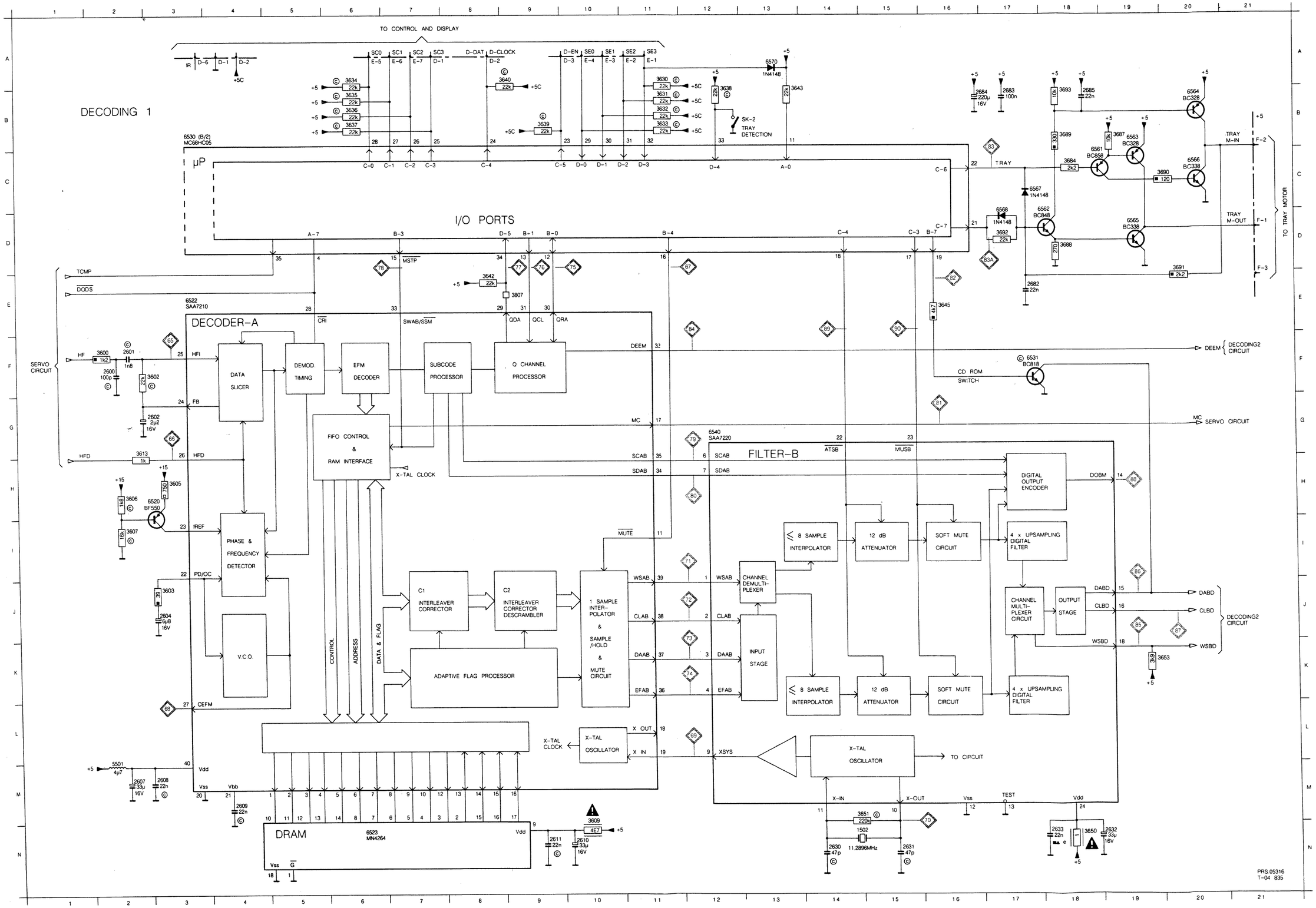
2508	H 3	2537	G 4	2565	K 3	2623	K17	2641	G15	2662	E11	2690	D10	2712	B11	3522	K 1	3547	I 7	3567	J 1	3583	K 5	3620	J18	3639	L14	3659	E12	3674	E17	3692	K12	3727	B 9	6504	K 2	6526	I18	6550	D 9	6566	L11	6585	C 8		
2509	H 3	2538	G 2	2570	L 8	2624	K17	2642	G16	2665	E16	2691	D12	2713	C10	3523	K 4	3550	G 4	3568	F 5	3584	K 6	3621	I18	3640	L15	366	J11	3750	B18	6505	J 3	6530	J16	6551	D 9	6567	L12	6586	D 8				
2510	I 3	2540	K 3	2571	K 6	2627	C14	2643	G16	2666	F15	2692	D10	2714	C11	3524	K 4	3551	I 6	3569	G 6	3585	J 7	3623	I18	3642	K16	3660	E16	3676	C17	3700	E10	3801	J 8	6506	K 3	6531	I15	6552	E 9	6568	K12	6587	D 8		
2511	H 4	2541	I 2	2572	L 9	2630	H15	2644	F15	2666	E14	2700	D 8	2715	B11	3525	H 6	3553	J 6	3570	K 9	3586	L 5	3627	J18	3643	J18	3661	E12	3677	C13	3701	D 9	3802	K 9	6508	I 6	6534	F13	6553	E 9	6569	H18	6590	C12		
2513	H 2	2542	K 1	2574	L 5	2631	H15	2645	F15	2667	E18	2701	H14	3501	G 1	3530	F 3	3554	H 6	3571	K 9	3587	L 5	3628	K17	3645	I14	3662	E16	3678	C17	3703	D10	3805	H14	6510	K 9	6535	E13	6554	D11	6570	K17	6591	A11		
2514	H 4	2543	J 2	2600	F 9	2632	I 17	2646	F15	2669	E17	2702	I 14	3502	J 3	3531	F 4	3555	H 6	3573	L 9	3588	K 7	3629	K17	3646	J17	3663	E12	3679	B14	3704	D11	3806	K14	6511	K 9	6536	E17	6555	D11	6575	D 7	6592	C10		



PRS. 04239
T07-851

DECODING 1

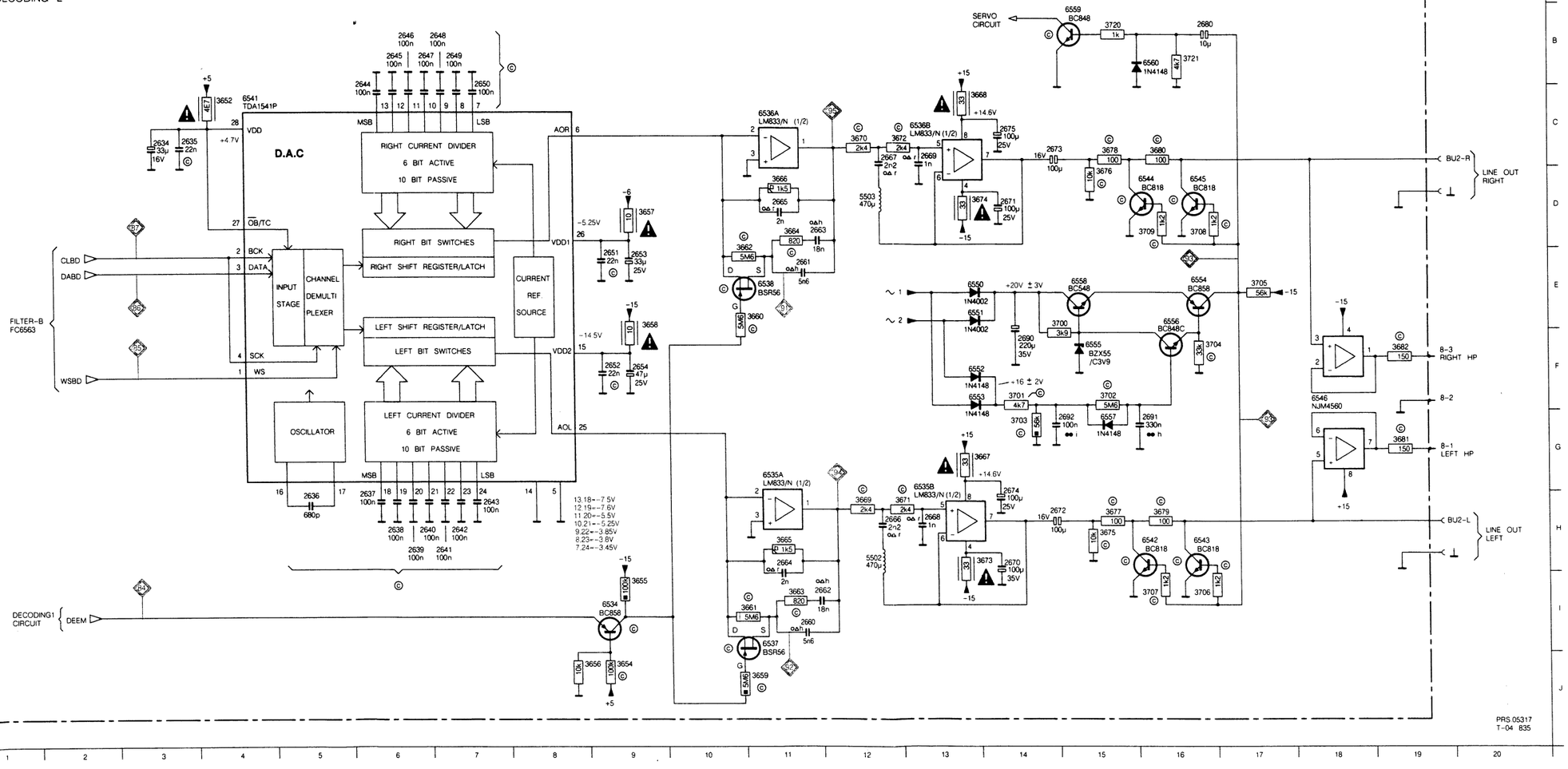
1502 N14 2600 F 2 2601 F 2 | 2602 G 3 2604 J 3 2607 M 2 | 2608 M 3 2609 M 4 2610 N10 | 2611 N 9 2630 N14 2631 N15 | 2632 N19 2633 N18 2682 E17 | 2683 B17 2684 B17 2685 B18 | 3600 F 2 3602 F 3 3603 J 3 | 3605 H 3 3606 H 2 3607 I 2 | 3609 M10 3613 G 2 3630 A11 | 3631 B11 3632 B11 3633 B11 | 3634 A 6 3635 B 6 3636 B 6 | 3637 B 6 3638 B12 3639 B 9 | 3640 A 9 3642 E 8 3643 B14 | 3645 E16 3650 N18 3651 M14 | 3653 K20 3684 C18 3687 B19 | 3688 D18 3689 B18 3690 C20 | 3691 D20 3692 D17 3693 B18 | 3807 E 9 5501 L 2 6520 H 3 | 6522 E 3 6523 N 6 6530 B 3 | 6531 F17 6540 G12 6561 C18 | 6562 C18 6563 B19 6564 B20 | 6565 D19 6566 C20 6567 C17 | 6568 C17 6570 A13 SK-2 B13



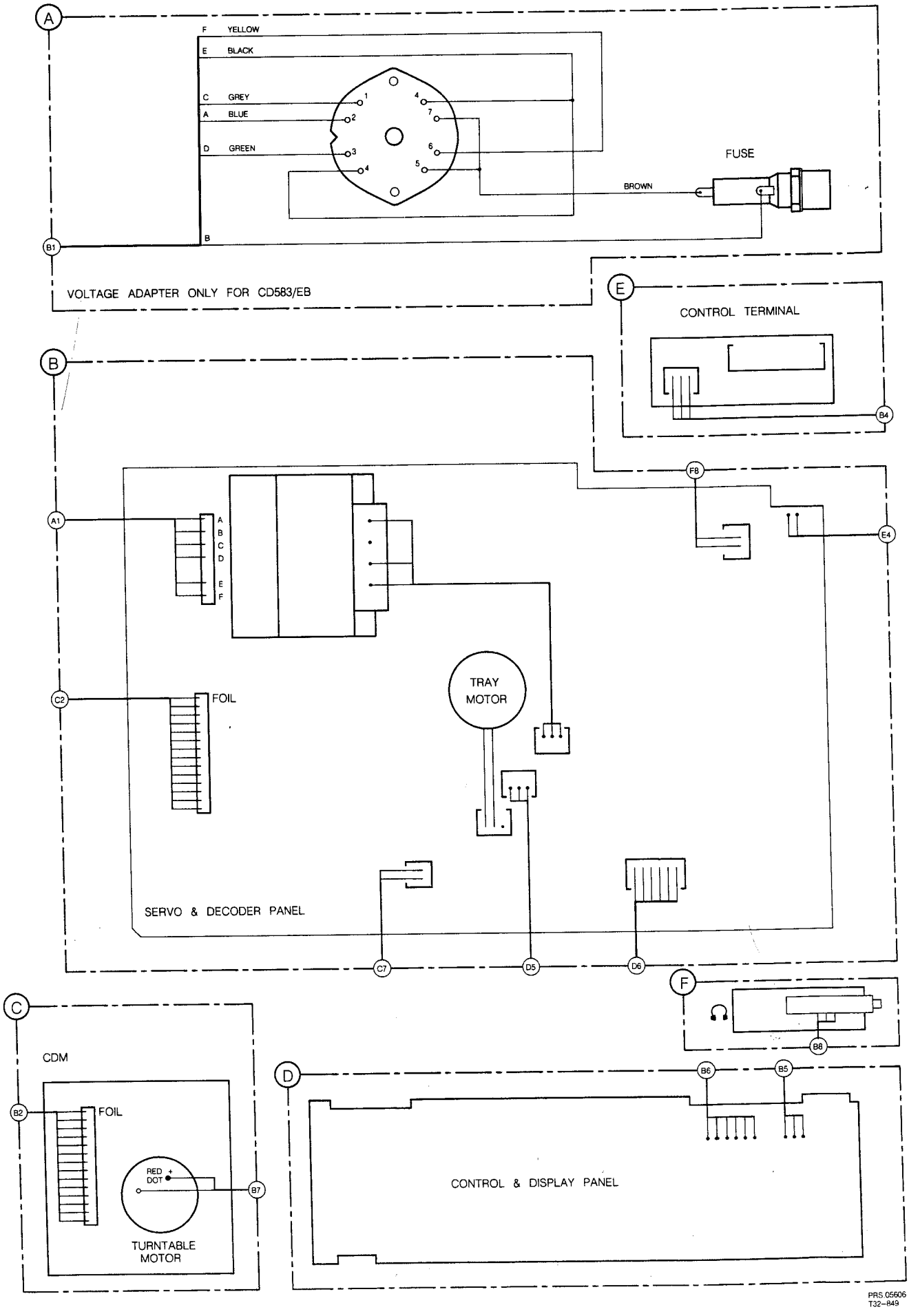
CS 20 180

2634 C 4 | 2640 H 6 | 2645 B 6 | 2649 B 7 | 2654 F 9 | 2664 H11 | 2670 H14 | 2675 C14 | 33µ0 C 3 | 3657 D 9 | 3662 D11 | 3667 G14 | 3673 C13 | 3677 H15 | 3682 F19 | 3704 F17 | 3707 I 16 | 6534 I 9 | 6537 I 11 | 6550 E13 | 6555 F15 | 6560 B16
2636 H 5 | 2641 H 7 | 2646 B 6 | 2650 B 7 | 2660 I 11 | 2665 D11 | 2671 D14 | 2680 B16 | 3652 C 4 | 3658 E 9 | 3663 I 11 | 3668 C14 | 3673 H14 | 3678 C15 | 3700 E15 | 3705 E17 | 3720 B15 | 6535A G11 | 6538 E11 | 6551 E13 | 6556 E16 | 6586 H16
2637 H 6 | 2642 H 7 | 2647 B 7 | 2651 E 9 | 2661 E11 | 2666 H12 | 2672 H14 | 2690 F14 | 3654 J 9 | 3659 J11 | 3664 D11 | 3669 H12 | 3674 D14 | 3679 H16 | 3701 F14 | 3706 D16 | 3721 B16 | 6535B G13 | 6541 C 4 | 6552 F13 | 6557 G15 | 6588 H16
2638 H 6 | 2643 H 7 | 2648 B 7 | 2652 F 9 | 2662 I 11 | 2667 C12 | 2673 C14 | 2691 G16 | 3655 I 9 | 3660 E11 | 3665 H11 | 3670 C12 | 3675 H15 | 3680 C16 | 3702 F15 | 3706 I 16 | 5502 D12 | 6536A C11 | 6544 D16 | 6553 F13 | 6558 E15 | 6589 D16
2639 H 6 | 2644 B 6 | 2649 C13 | 2653 E 9 | 2663 D11 | 2668 H13 | 2674 G14 | 2692 G15 | 3656 J 9 | 3661 I 11 | 3666 D11 | 3671 H13 | 3676 D15 | 3681 G19 | 3703 G14 | 3707 D16 | 5503 D12 | 6536B C13 | 6546 F18 | 6554 E16 | 6559 B15

DECODING 2

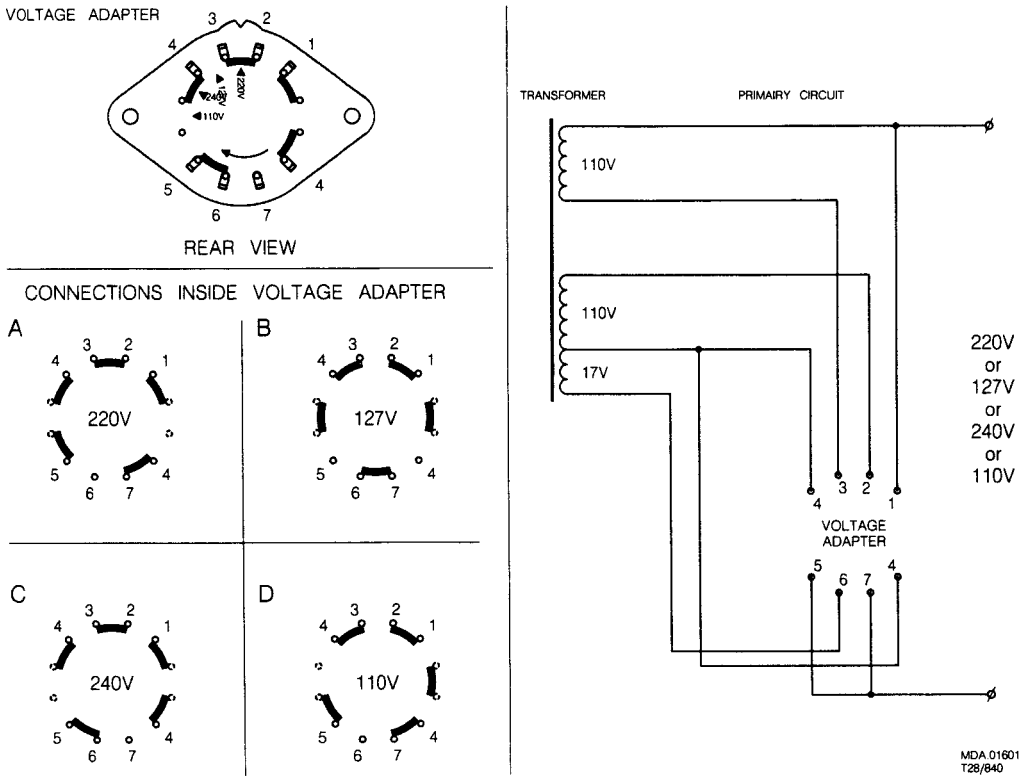


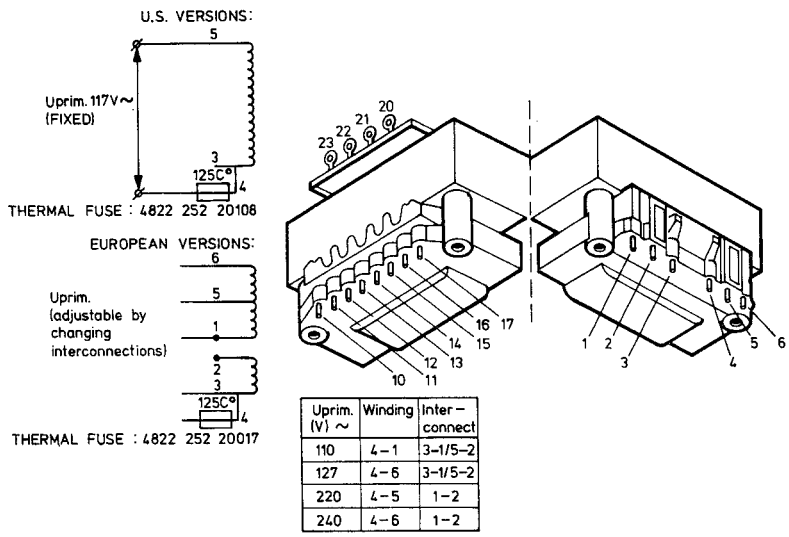
WIRING DIAGRAM



PRS.05606
T32-849

ONLY FOR /EB

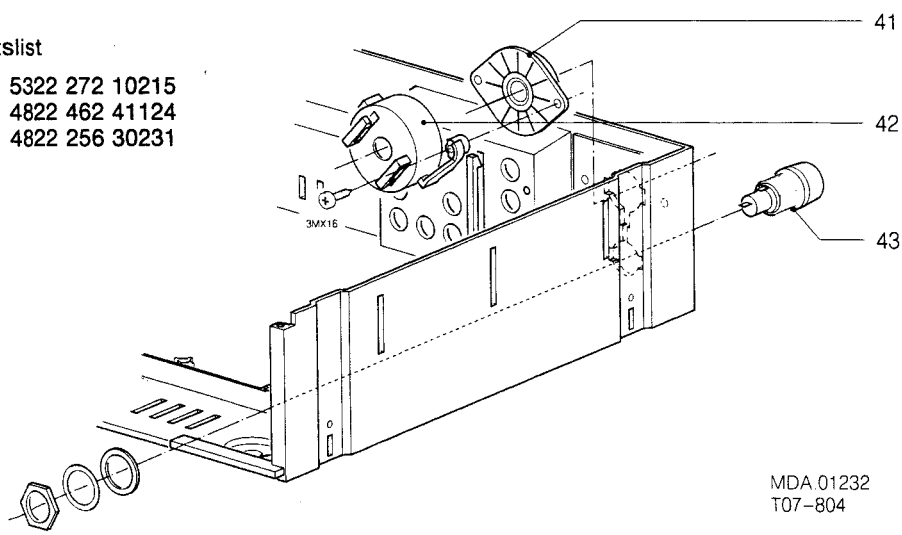




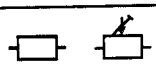
Uprim. (V) ~	Winding	Inter – connect
110	4–1	3–1/5–2
127	4–6	3–1/5–2
220	4–5	1–2
240	4–6	1–2

partslist

41 5322 272 10215
42 4822 462 41124
43 4822 256 30231



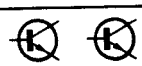
ELECTRICAL PARTSLIST SUPPLY SERVO & DECODER PANEL



Safety res. 4E7	4822 111 30499
Trimpot. 4k7 LIN	4822 101 10685
Safety res. 18E	4822 111 30515
Safety res. 12E	4822 111 30511
Safety res. 1E	4822 111 30483
Trimpot. track 22k LIN	4822 100 20522
Metal film res. 100k 1%	4822 116 52973
Safety res. 10E	4822 111 30508
Metal film 1k8 1%	4822 116 53109
Safety res. 33E	4822 111 30522

Crystal 11.289,60 kHz	4822 242 71644
Ceram filter 400 MHz	4822 242 70831
Cap. foil 8,2 nF 1%	4822 121 51321
Bipolar elco 680 nF 50V	4822 124 41583
Cap. foil 4,7 nF 1%	4822 121 51051
Cap. foil 15 nF 1%	4822 121 51049
Bipolar elco 100µ 16 V	4822 124 22339
Bipolar elco 10µ 25 V	4822 124 41558
Elco 6800 µF 16 V	4822 124 41591

BZX55C7V5	4822 130 81101
1N4148	4822 130 30621
BZX55C3V0	4822 130 81122
1N4002	5322 130 30684
BZX55C3V9	4822 130 33637
BZX85C6V2	5322 130 32962
BZX55C15V0	4822 130 81086
BZX55C4V7	5322 130 80275



BC338	4822 130 44121
BC858	5322 130 42012
BC328	4822 130 44104
BC818	4822 130 42675
BC848C	5322 130 42136
BC548	4822 130 40938
BC848	5322 130 41981
BC328-16	4822 130 41023

TDA8808T/C3	4822 209 73234
TDA8809T/C2	4822 209 73235
TCA0372DP2	4822 209 72587
NJM4560D	4822 209 83274
SAA7210P/04	4822 209 71001
MN4264-15	4822 209 70422
µP 68HC05C8/P105	4822 209 73232
LM833N	4822 209 83163
SAA7220P/B	4822 209 72545
TDA1541A/N2	4822 209 72544
MC78M12CT	4822 209 86176
MC78L15	4822 209 80889
TY40408	4822 209 71579
MC7906CT	4822 209 82056
MC79M15CT	4822 209 86361

Mains switch SK1	4822 276 11309
TRAY switch on PCB	4822 276 11896
Mains inlet BU1	4822 265 20291
Cinch socket 2p	4822 267 30881
Fuse holder	4822 256 30274

Coil 4,7 µH	4822 157 53139
Coil 470 µH	4822 157 53141

Miscellaneous

Headphone socket	4822 267 30743
Fuse	4822 253 30009
Transport protection	4822 417 20162
Mains transformer	4822 146 30702
Transformer fuse	4822 252 20017
Dir. for use	4822 736 20074

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1 pF	5%	4822 122 32479
1,2 pF	5%	4822 122 33013
1,5 pF	5%	4822 122 31792
1,8 pF	5%	4822 122 32087
2,2 pF	5%	4822 122 32425
3,3 pF	5%	4822 122 32079
3,9 pF	5%	4822 122 32081
4,7 pF	5%	4822 122 32082
5,6 pF	5%	4822 122 32506
6,8 pF	5%	4822 122 32507
8,2 pF	5%	4822 122 32083
10 pF	5%	4822 122 31971
12 pF	5%	4822 122 32139
15 pF	5%	4822 122 32504
18 pF	5%	4822 122 31769
22 pF	10%	4822 122 31837
27 pF	5%	4822 122 31966
33 pF	5%	4822 122 31756
39 pF	5%	4822 122 31972
47 pF	5%	4822 122 31772
56 pF	5%	4822 122 31774
68 pF	5%	4822 122 31961
82 pF	10%	4822 122 31839
100 pF	5%	4822 122 31765
120 pF	5%	4822 122 31766
150 pF	5%	4822 122 31767
180 pF	2%	4822 122 31794
220 pF	5%	4822 122 31965
270 pF	5%	4822 122 32142
330 pF	10%	4822 122 31642
390 pF	5%	4822 122 31771
470 pF	5%	4822 122 31727
560 pF	5%	4822 122 31773
680 pF	5%	4822 122 31775
820 pF	5%	4822 122 31974
1 nF	10%	5322 122 31647
1,2 nF	5%	4822 122 31807
1,5 nF	10%	4822 122 31781
1,8 nF	10%	4822 122 32153
2,2 nF	10%	4822 122 31644
2,7 nF	10%	4822 122 31783
3,3 nF	10%	4822 122 31969
3,9 nF	10%	4822 122 32566
4,7 nF	10%	4822 122 31784
5,6 nF	10%	4822 122 31916
6,8 nF	10%	4822 122 31976
10 nF	10%	4822 122 31728
12 nF	10%	5322 122 31648
15 nF	10%	4822 122 31782
18 nF	10%	4822 122 31759
22 nF	10%	4822 122 31797
27 nF	10%	4822 122 32541
33 nF	10%	4822 122 31981
47 nF	10%	4822 122 32542
56 nF	10%	4822 122 32183
100 nF	10%	4822 122 31947
180 nF	10%	4822 122 32915
220 nF	20%	4822 122 32715

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0 E	jumper	4822 111 90163
1 E	5%	4822 111 90184
1,1 E	5%	4822 111 90377
1,2 E	5%	4822 111 90378
1,3 E	5%	4822 111 90379
1,5 E	5%	4822 111 90381
1,6 E	5%	4822 111 90382
1,8 E	5%	4822 111 90383
2 E	5%	4822 111 90384
2,2 E	5%	5322 111 90104
2,4 E	5%	4822 111 90385
2,7 E	5%	4822 111 90386
3 E	5%	4822 111 90387
3,3 E	5%	4822 111 90388
3,6 E	5%	4822 111 90389
3,9 E	5%	4822 111 90391
4,3 E	5%	4822 111 90392

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4,7 E	5%	5322 111 90376
5,1 E	5%	4822 111 90393
5,6 E	5%	4822 111 90394
6,2 E	5%	4822 111 90395
6,8 E	5%	4822 111 90254
7,5 E	5%	4822 111 90396
8,2 E	5%	4822 111 90397
9,1 E	5%	4822 111 90398
10 E	2%	5322 111 90095
11 E	2%	4822 111 90338
12 E	2%	4822 111 90341
13 E	2%	4822 111 90343
15 E	2%	4822 111 90344
16 E	2%	4822 111 90347
18 E	2%	5322 111 90139
20 E	2%	4822 111 90352
22 E	2%	4822 111 90186
24 E	2%	4822 111 90355
27 E	2%	5322 111 90105
30 E	2%	4822 111 90356
33 E	2%	4822 111 90357
36 E	2%	4822 111 90359
39 E	2%	4822 111 90361
43 E	2%	5322 116 90125
47 E	2%	4822 111 90217
51 E	2%	4822 111 90365
56 E	2%	4822 111 90239
62 E	2%	4822 111 90367
68 E	2%	4822 111 90203
75 E	2%	4822 111 90371
82 E	2%	4822 111 90124
91 E	2%	4822 111 90375
100 E	2%	5322 111 90091
110 E	2%	4822 111 90335
120 E	2%	4822 111 90339
130 E	2%	4822 111 90164
150 E	2%	5322 111 90098
160 E	2%	4822 111 90345
180 E	2%	5322 111 90242
200 E	2%	4822 111 90348
220 E	2%	4822 111 90178
240 E	2%	4822 111 90353
270 E	2%	4822 111 90154
300 E	2%	4822 111 90156
330 E	2%	5322 111 90106
360 E	1%	4822 111 90288
360 E	2%	4822 111 90358
390 E	2%	5322 111 90138
430 E	2%	4822 111 90362
470 E	2%	5322 111 90109
510 E	2%	4822 111 90245
560 E	2%	5322 111 90113
620 E	2%	4822 111 90366
680 E	2%	4822 111 90162
750 E	2%	5322 111 90306
820 E	2%	4822 111 90171
910 E	2%	4822 111 90372
1 k	2%	5322 111 90092
1,1 k	2%	4822 111 90336
1,2 k	2%	5322 111 90096
1,3 k	2%	4822 111 90244
1,5 k	2%	4822 111 90151
1,6 k	2%	5322 111 90265
1,8 k	2%	5322 111 90101
2 k	2%	4822 111 90165
2,2 k	2%	4822 111 90248
2,4 k	2%	4822 111 90289
2,7 k	2%	4822 111 90569
3 k	2%	4822 111 90198
3,3 k	2%	4822 111 90157
3,6 k	2%	5322 111 90107
3,9 k	2%	4822 111 90571
4,3 k	2%	4822 111 90167
4,7 k	2%	5322 111 90111
5,1 k	2%	5322 111 90268
5,6 k	2%	4822 111 90572
6,2 k	2%	4822 111 90545

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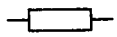
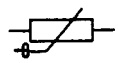
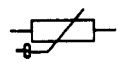
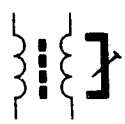
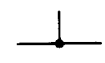
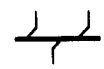
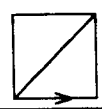
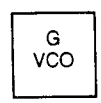
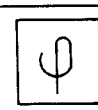
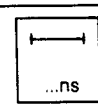
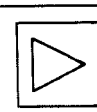
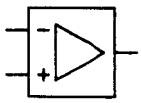
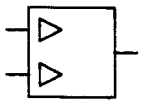
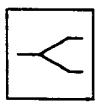
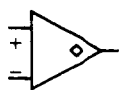
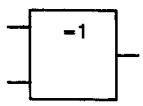
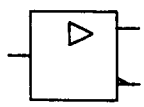
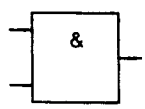
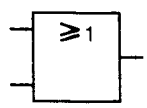
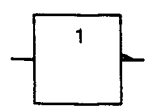
1U

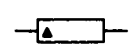
6,8 k	2%	4822 111 90544
7,5 k	2%	4822 111 90276
8,2 k	2%	5322 111 90118
9,1 k	2%	4822 111 90373
10 k	2%	4822 111 90249
11 k	2%	4822 111 90337
12 k	2%	4822 111 90253
13 k	2%	4822 111 90509
15 k	2%	4822 111 90196
16 k	2%	4822 111 90346
18 k	2%	4822 111 90238
20 k	2%	4822 111 90349
22 k	2%	4822 111 90251
24 k	2%	4822 111 90512
27 k	2%	4822 111 90542
30 k	2%	4822 111 90216
33 k	2%	5322 111 90267
36 k	2%	4822 111 90514
39 k	2%	5322 111 90108
43 k	2%	4822 111 90363
47 k	2%	4822 111 90543
51 k	2%	5322 111 90274
56 k	2%	4822 111 90573
62 k	2%	5322 111 90275
68 k	2%	4822 111 90202
75 k	2%	4822 111 90574
82 k	2%	4822 111 90575
91 k	2%	5322 111 90277
100 k	2%	4822 111 90214
110 k	2%	5322 111 90269
120 k	2%	4822 111 90568
130 k	2%	4822 111 90511
150 k	2%	5322 111 90099
160 k	2%	5322 111 90264
180 k	2%	4822 111 90565
200 k	2%	4822 111 90351
220 k	2%	4822 111 90197
240 k	2%	4822 111 90215
270 k	2%	4822 111 90302
300 k	2%	5322 111 90266
330 k	2%	4822 111 90513
360 k	2%	4822 111 90515
390 k	2%	4822 111 90182
430 k	2%	4822 111 90168
470 k	2%	4822 111 90161
510 k	2%	4822 111 90364
560 k	2%	4822 111 90169
620 k	2%	4822 111 90213
680 k	2%	4822 111 90368
750 k	2%	4822 111 90369
820 k	2%	4822 111 90205
910 k	2%	4822 111 90374
1 M	2%	4822 111 90252
1,1 M	5%	4822 111 90408
1,2 M	5%	4822 111 90409
1,3 M	5%	4822 111 90411
1,5 M	5%	4822 111 90412
1,6 M	5%	4822 111 90413
1,8 M	5%	4822 111 90414
2 M	5%	4822 111 90415
2,2 M	5%	4822 111 90185
2,4 M	5%	4822 111 90416
2,7 M	5%	4822 111 90417
3 M	5%	4822 111 90418
3,3 M	5%	4822 111 90191
3,6 M	5%	4822 111 90419
3,9 M	5%	4822 111 90421
4,3 M	5%	4822 111 90422
4,7 M	5%	4822 111 90423
5,1 M	5%	4822 111 90424
5,6 M	5%	4822 111 90425
6,2 M	5%	4822 111 90426
6,8 M	5%	4822 111 90235
7,5 M	5%	4822 111 90427
8,2 M	5%	4822 111 90237
9,1 M	5%	4822 111 90428
10 M	5%	5322 111 91141

SYMBOL	DESCRIPTION
	Capacitor, general
	Electrolytic capacitor (+ and – may be omitted)
	Bipolar electrolytic capacitor (+ may be omitted)
	Resistor, general
	N.T.C. resistor
	P.T.C. resistor
	Voltage divider with preset adjustment
	Chip jumper
	Pin contact
	Bus contact
	Coil, self-induction
	Transformer with electrically poor conducting core and adjustable pre-magnetization
	Diode
	Zener diode
	Stabistor
	Double variable capacity diode (in one envelope)
	Photo conductive diode
	L.E.D.

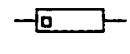
SYMBOL	DESCRIPTION
	Transistor (N.P.N.)
	Transistor (P.N.P.)
	Direct current (DC)
	Alternating current (AC)
	Earth (functional)
	Frame or chassis connection
	Direction in which AC voltages are passed on (optional present)
	Interrupted line
	Not-connected crossing lines
	Connected lines
	Cable tree with lead-outs
	Changer, general (arrow is optional)
	Voltage Controlled Oscillator
	Band-pass filter
	Phase changing network
	Delay element
	Amplifier, general

MDA.00083
T32-735

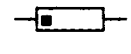
SYMBOL	DESCRIPTION
	Operational amplifier
	Differential amplifier
	Splitter
	Operational amplifier with open output
	Exclusive OR gate
	True/complement amplifier with high input
	Flip Flop
	AND gate
	OR gate
	Inverter with high input



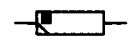
0.2W (CR 16) ⩽ 220kΩ 5%
> 270kΩ 10%



0.33W (CR 25) ⩽ 1MΩ 5%
> 1MΩ 10%



0.33W (SFR25) 5%



0.25W (VR 25) ⩽ 10MΩ 5%
> 10MΩ 10%

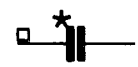
0.5W (CR 37) ⩽ 1MΩ 5%
> 1MΩ 10%

0.67W (CR 52) 5%

1.15W (CR 68) 5%

Ceramic plate

Polyester flat foil

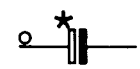


Polyester mepolesco

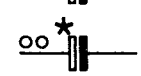
Mylar (Polyester flat foil small sized)

Micropoco

Tubular ceramic (body colour pink or yellow/green)



Miniature single elco



Subminiature tantalum

* a=2,5V
b=4V
c=6,3V
d=10V
e=16V
f=25V
g=40V
h=63V
i=100V
j=125V
l=125V
m=150V
n=160V
q=200V
r=250V
s=300V
t=350V
u=400V
v=500V
w=630V
x=1000V
A=1.6V
B=6V
C=12V
D=15V
E=20V
F=35V
G=50V
H=75V
I=80V

MDA.00084
T32-735

M.T.P.